#### Submission deadline November 24<sup>th</sup>, 2021

Email: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

From: Gwyn Jones

Thank you for the opportunity to submit on whether there should be limits to carbon offsetting on farmland. My firm response is **Yes**, given, as part of 50 Shades of Green, I have spent the last 2 ½ years watching the speed at which speculators have read the government signals with a keen focus on their future profits at the expense of a future New Zealand.

This submission is short because I have broken bones, concussion, and in a neck brace, please excuse the brevity, but I feel, we have put our concerns forward many times before and other submissions will deal with the data.

The difference now is the acknowledgement by many, the policy is flawed

Putting it succinctly, let me quote yesterday's press announcement by the Native Forest Coalition<sup>1</sup> highlighting "the urgent need to halt the rapid proliferation of pine plantations driven by high carbon prices and short-term policy settings".

The concerns being expressed by many credible groups now include:

## The opportunity cost

Unbelievably, the loss to NZ with the decimation of hill country farming has not been factored in. When you take out vast areas of breeding hill country there are downstream effects not accounted for, including but not limited to:

- a. Loss of biodiversity
- b. Increased fire risk <sup>2</sup>
- c. Significant disruption to the livestock supply chain
- d. Loss of jobs<sup>3</sup>
  - i. Farming and their support industries, mechanics, accountants, shearers, stock agents, & significant other local business....
- e. Impact on communities
- f. Lost export income
- g. Loss of tax revenue

## The Gold Rush.

<sup>2</sup> +71% increased fire risk by 2040(PCE Report), storms destroying offset forests (increasing volatility and extreme events), higher temperatures increasing pathogen/disease rick to name a few.

<sup>&</sup>lt;sup>1</sup> https://www.scoop.co.nz/stories/PO2111/S00214/new-coalition-demands-a-halt-to-further-large-scale-exotic-carbon-farming.htm

<sup>&</sup>lt;sup>3</sup> Wairoa report

These settings have created a market for sellers, driven by speculation resulting in farms on the market that don't go into carbon being few and far between, those owners who are able to say no to the prices offered by carbon investors are in unique circumstances and are the exception to the rule. Currently it's not right tree right place, it's the next farm up for sale

• An inevitable effect under the current settings: Impeding new or young farming entrants into the industry, where in normal circumstances, hill country properties offer access for starting a farming career, but the (often) doubling in price/ha results in new entrants completely priced out of the market. It also negatively affects the natural market of farm to production forestry sales

## Lack of consultation.

This policy does nothing to combat the reality of all sorts of things being winged with little meaningful consultation. And what consultation has taken place, completely ignored. Talk to local farmers, they're going "what consultation?" It has been a top-down process all in cities by those who don't have a farming background on making rules and regulations without crediting the knowledge of those at the coal face. Everything 50 Shades of Green predicted has been borne out.

It is a silly government who doesn't listen to those who feed the nation and understand the land.

If more proof is needed of the incentives driving carbon investors, consider looking at what's happening when land is purchased for carbon mining. Often, all the buildings are taken off which immediately impacts the local community, drops the value of land, and correspondingly increases farmers rates, as district councils look to make up for the drop in income

## Agriculture has an emissions reductions plan

Holding back change by incentivising offsetting rather than reduction, is at the expense of the NZ economy, and equally, those calling for ag to be in ETS don't understand the issues at all. That we are trying to address emissions and reduce the warming effect.

NZ's position on climate change is bizarre, we, trumpeting cutting emissions by 50%, how false, we're proposing offsetting and buying the rest.

The Government sooner or later has to address the central issue:

• The impact of fossil fuels on NZ climate emissions, there is only ONE industry in NZ at the moment with an emissions reduction plan, and that is Agriculture, yet here we are kneecapping the Golden Goose

#### One off Corporate Investment

Make no mistake, the phrase ' carbon farming' is a misnomer. A farmer tends the land - as a caretaker for the next generation. What we are discussing here, is a one-off corporate investment in land accruing a large amount of cash over 17 years then abandoning both the land and the surrounding communities. It is not farming

Please. Limit carbon offsetting on farmland. There are other ways more beneficial to NZ, starting with integrated on farm planting, and shutting off the ETS to new entrants, as a couple of examples.

New Zealand's hard won export markets built up over many years are an essential lifeblood for our economy, if nothing changes to limit land use change to exotic pine, it is game over for regional NZ.

We need a mechanism and Government needs to signal it quickly

Yours sincerely Gwyn Jones On behalf of 50 Shades of Green www.50shadesofgreen.co.nz

| From:    |  |
|----------|--|
| Sent:    |  |
| To:      |  |
| Subject: |  |

Albert Saunders Tuesday, 23 November 2021 7:20 pm climate consultation 2021 Carbon offsetting

## MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Dear government,

I'm very much opposed to overseas companies been able to convert good farmland into pine for carbon credits. It is not marginal land in my district in Southern Hawkes Bay/ Tararua that has been converted. There is very little economic gain to the community it pine tries that wreck the land and water waters here.

Put end to it please.

Albert Saunders

| From:    | Alex Gibson                         |
|----------|-------------------------------------|
| Sent:    | Wednesday, 24 November 2021 6:24 am |
| То:      | climate consultation 2021           |
| Subject: | limit carbon offsetting on farmland |

## MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

The government should limit carbon offsetting on farmland.

I'm a Farmer on the lower eastern north island.

Thanks

Alex Gibson

## Emissions Reduction Plan for NZ to reach its 2030 and 2050 emissions targets under the

## Climate Change Response Act 2002 as amended in 2019.

Submission from: Green Task Force of All Saints' Anglican Parish

Authors:Barbara Arnold (GTF coordinator), Rebecca Demchick,<br/>Robert Gibb, Kirsten Holst, & Keith Young.

Contacts:

Barbara Arnold

Postal Address:All Saints' Parish Office<br/>PO Box 549<br/>Palmerston North 4440Region:Manawatu

Robert Gibb

## All Saints' Parish:

The All Saints Anglican Parish is part of the Diocese of Wellington of the Anglican Church in Aotearoa, New Zealand. It is the largest parish in the Manawatu, and one of the larger parishes in the Wellington Diocese with a roll of about 500 parishioners. This submission's authors are members of All Saints Parish's Green Task Force, who are responsible for the Parish's Care of Creation. This submission aligns with All Saints GTF submissions on the draft ZCB in 2019 and with All Saints' individual parishioner's responses to the CCC draft report in March 2021.

## Recommendation Summary:

**GTF Recommendation 1:** that the government takes urgent sustainable steps to specifically address New Zealand's Gross reduction of emissions and to act now to meet our global obligations.

GTF Recommendation 2: re-order the guiding principles outlined in Table 5, p19 as follows:

- 1. Environmental benefits beyond emissions reductions.
- 2. Upholding Te Tiriti o Waitangi.
- 3. Social and cultural benefits.
- 4. A fair, equitable and inclusive transition.
- 5. An evidence-based approach.
- 6. A clear, ambitious and affordable path.

**GTF Recommendation 3:** Under proposed GP 1 make 'consider wider environmental benefits as a reason to act – such as environmental resilience, bio-diversity, water quality and air quality benefits.' the first bullet point and keep the 'promote nature-based ....' bullet point as the second item.

**GTF Recommendation 4:** Under proposed GP 2 add '*recognise te ao Māori when considering the interconnectedness of societal and environmental impacts*' as the first bullet point under fulfilment of upholding *Te Tiriti o Waitangi* 

**GTF Recommendation 5:** Under proposed GP 3 make '*consider wider societal and cultural benefits as a reason to act – such as building resilience, and broader social, health, and* 

*cultural benefits.*' as first bullet point and add this second bullet point '*recognise the long-term benefit of systemic demand reduction across all sectors as a means to achieve pan-sector emissions reduction and social benefits*'.

**GTF Recommendation 6:** Under proposed GP 4 add 'follow the principles of Just Transition in developing and implementing plans' as the first bullet point.

**GTF Recommendation 7:** Under proposed GP 5 add 'consider the need for open monitoring systems and analytics support into systems to enable proactive self-management at all levels of society'

**GTF Recommendation 8:** Under proposed GP 6 add 'consider the need for interventions to assist with enabling projects that have desired co-benefits outlined in these guiding principles.'

## Recommendation Commentary:

All Saints Green Task Force(GTF) strongly supports the work being undertaken to achieve a Emissions Reduction Plan to set the pace for emissions reductions by 2030 and beyond, across a range of areas, including energy, transport, waste, agriculture, construction and financial services.

In our recommendations on the Zero Carbon Bill<sup>1</sup>, GTF made the case to move faster than was proposed, primarily to avoid the very real risk of tipping points in the earth's response to climate change drivers. We are critically concerned that the plan as proposed falls short not only of what is needed but is also insufficient to meet our commitments to the Paris Agreement. It is noted that in the lead-up to COP26 and in response to "the urgency of climate action and our duty to respond", as detailed in the August 2021 report of the IPCC<sup>2</sup>. New Zealand's National Determined Contribution<sup>3</sup> was updated,

We agree with James Shaw, Minister for Climate Change when he stated, "To stand a chance of limiting global warming to 1.5C, the science shows we now have about eight years left to almost halve global greenhouse gas emissions,"<sup>4</sup> However when he further announced that a two thirds of the reduction could come from purchasing offshore climate offset or other global reductions, rather than a domestic cut. We firmly believe that this should not be an acceptable strategy. We believe it is critically important that NZ have a very strong focus firstly on maximising Gross reductions and secondly that offsets should be constrained by what NZ can offset locally. The only exception to local offsets should be for exported products that have already met stringent gross reduction emission targets and where the cost of the offsets is absolutely guaranteed to achieve climate positive environmental and societal benefits in the country responsible for ensuring the offsets are secured. Fundamentally New Zealanders are globally high emitters and have no right to impose offsets on foreign nations that are a burden to or close off climate action options for

<sup>&</sup>lt;sup>1</sup> <u>https://www.parliament.nz/en/pb/sc/submissions-and-advice/document/52SCEN\_EVI\_87861\_EN10230/all-saints-anglican-parishs-green-task-force</u>

<sup>&</sup>lt;sup>2</sup> <u>https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809</u>

<sup>&</sup>lt;sup>3</sup> <u>https://www.stuff.co.nz/environment/climate-news/126838746/new-zealand-increases-climate-pledge-aims-to-cut-emissions-by-50-per-cent-by-2030</u>

<sup>&</sup>lt;sup>4</sup> Para 6: https://www.stuff.co.nz/environment/climate-news/126838746/new-zealand-increases-climate-pledgeaims-to-cut-emissions-by-50-per-cent-by-2030

that nation. We also note that Oxfam, Greenpeace, and lawyers for Climate Action<sup>5</sup> have all criticised the Minister's announcement.

**GTF Recommendation 1:** that the government takes urgent sustainable steps to specifically address the Gross reduction of emissions and to act now to meet our global obligations.

This submission addresses the Guiding Principles in meeting the net zero challenge to achieve reduction in emissions providing an over-arching structure and prioritisation that we believe will both have pan-sector benefits in the short term and facilitate longer term

#### Q1 Guiding Principles pages 22,23

The need for guiding principles is supported, the proposed principles are valid but require strengthening. They enable a values-based approach that provides a fundamental component for decision-making and as a guide to process and implementation.

Our ZCB submission recommended that priority should be given firstly to planetary wellbeing (the global and local environment), so that it can in turn support the secondary priority of societal wellbeing, which in turn both enable the third priority of a vibrant economy.

**GTF Recommendation 2:** re-order the guiding principles outlined in Table 5, p19 as follows:

1. Environmental benefits beyond emissions reductions.

Recent research is suggesting that while at the scale of the Universe primitive life might be quite common, the conditions to foster the evolution of higher forms of life are extremely rare<sup>6</sup>. By corollary if we mess with our environment the natural order of things is that the Earth is more likely to revert to being inhospitable to higher life. This is the very real risk of tipping points. In contrast if we look after and value the earth in all its diversity and bio-diversity and find ways of living in equilibrium with our surroundings then we have a chance of continuing as a species – so this guiding principle comes first.

**GTF Recommendation 3:** make 'consider wider environmental benefits as a reason to act – such as environmental resilience, bio-diversity, water quality and air quality benefits.' the first bullet point and keep the 'promote nature-based..' bullet point as the second item.

2. Upholding Te Tiriti o Waitangi.

In the wider sense upholding Te Tiriti o Waitangi is to acknowledge Te Ao Maori and the interconnectedness of environment and society – so this guiding principle comes second.

**GTF Recommendation 4:** add 'recognise te ao Maori when considering the interconnectedness of societal and environmental impacts' as the first bullet point under fulfilment of upholding *Te Tiriti o Waitangi* 

3. Social and cultural benefits. Separate Social and cultural benefits from environmental benefits above. In this

<sup>&</sup>lt;sup>5</sup> Para 13: https://www.stuff.co.nz/environment/climate-news/126838746/new-zealand-increases-climate-pledge-aims-to-cut-emissions-by-50-per-cent-by-2030

<sup>&</sup>lt;sup>6</sup> https://www.stuff.co.nz/science/127003358/simple-life-probably-common-in-our-galaxy-intelligence-incredibly-rare-says-prof-brian-cox

category of guiding principle add the overarching concept of demand reduction.. Historically whenever more efficient ways of doing things have come to market, the result has been an increase in demand that outweighs the benefit of the increased efficiency. A specific focus on demand reduction is seen as a means to achieve enduring win-win gains. As one small example, promotion of well-designed city suburb based village amenities coupled with higher density living in the immediate surroundings can foster significant transport mode shift towards walking and microtransport, coupled with inter-village public transport resulting in significant reduction in demand for personal vehicle use. But it also reduces the length of all utility networks, and increases the efficiency of road network use – so multiple aspects of demand a reduced by this one intervention. Siloed single sector approaches, on the other hand won't identify this as a solution. This is also an example of something that has benefits that persist long into the future, but is less likely to deliver short term gains. The longer term nature, just increases the importance of starting now, rather than allowing existing thinking to continue locking in high demand for the long term.

**GTF Recommendation 5:** make 'consider wider societal and cultural benefits as a reason to act – such as building resilience, and broader social, health, and cultural benefits.' as first bullet point and add this second bullet point 'recognise the long-term benefit of systemic demand reduction across all sectors as a means to achieve pansector emissions reduction and social benefits'.

4. A fair, equitable and inclusive transition.

GTF considers that the concept of Just Transition is critical to achieving buy-in for the societal change that is needed. It is more than just 'fair, equitable and inclusive', Just Transition is a deliberate top down and bottom-up proactive approach to change that balances management of change across the system with facilitation and enablement at the level of the individual, so that individuals want to change and an appropriate environment is proactively fostered for people to change to.

**GTF Recommendation 6:** add 'follow the principles of Just Transition in developing and implementing plans' as the first bullet point.

5. An evidence-based approach.

GTF strongly supports science and evidence-based approaches, to the extent that we also recommend building in data gathering for monitoring as a key component of all solutions to ensure that we are building a strong evidence base for everyone to individually and collectively assess our progress and adjust our actions and behaviour.

**GTF Recommendation 7:** add 'consider the need for open monitoring systems and analytics support into systems to enable proactive self-management at all levels of society'

6. A clear, ambitious and affordable path.

Projects and interventions are often only identified as affordability when suitably longterm financial assessments are done, or when the benefits are broadened to include environmental and societal co-benefits. These co-benefits may also have indirect value to the project funder.

**GTF Recommendation 8:** add 'consider the need for interventions to assist with enabling projects that have desired co-benefits outlined in these guiding principles'

## Conclusion

GTF maintains that the Plan does not provide for the essential targets and actions to reach our global commitment to the Paris Agreement, to reduce carbon emissions. This must be urgently addressed by leadership in the Plan to mandate both policy and implementation, at public and corporate levels and within civil society.

The underlying proposition here is that while enormous short-term focus is needed for us to collectively and individually change direction towards a more sustainable and equitable future, this isn't just a short-term distraction it is at the same time we are laying foundations for a sustainable and equitable future that is easier to sustain and becomes the new cultural norm.



24 November 2021

## Submission on: Emissions Reduction Plan

Contact Person:

**Robert Moore** Social Justice Researcher

## About us

Mahi Mihinare Anglican Action, a Treaty and faith-based justice Mission, views all of creation as having a soul worthy of care and respect. To this end, we advocate and stand in solidarity with all of creation being denied justice.

We seek a world where all life flourishes. We seek a stable environment that enables the unique interdependence that a rich biodiversity creates. Tragically unsatiated human greed continues to live without limits, resulting in destructive extraction and production. Such practices damage the earth, reduce natural habitats, and increase the loss of biodiversity. Increased greenhouse gas emissions increase global temperatures that result in catastrophic climate change, the impact of which is felt first and hardest by vulnerable communities.

As a mission we seek to live out our commitment to care for all of creation as we respond to climate and environmental challenges. In July 2020 our social enterprise, *Ethos Café and Catering*, stopped offering single-use takeaway cups diverting an estimated 4,500 cups away from landfill. Our wider waste minimisation work introduced at the same time has diverted an estimated 1,500kgs from landfill into compost or recycling. We have begun the process of transitioning to electric fleet vehicles with an estimated reduction of over 170,000 kgs of CO2 annually. We're doing our part, but this shouldn't be left to those with the resources to make these changes happen. Therefore, we welcome the opportunity this submission process offers, to call for greater support and bigger action.

## Submission

 Now is the time for bold leadership to make it easy across all areas, for people to make decisions that have reduced emissions. People want to make these decisions but there can be confusing information and unnecessary and structural barriers for people to overcome to realise these changes. Government leadership is necessary to make it easy for everyone to be part of an emissions-free future, this cannot be achieved if simply left to consumer choice and proactive individuals.

- 2. The emissions reduction plan is an opportunity to address capital inequality in Aotearoa. It recognizes that much capital has been gained from the exploitation of labour and natural resources; however, this capital has not been equitably distributed. The redistribution of capital should be an important principle in this transition. Addressing the impact of high emission industries on the environment has not been carried by those industries themselves. That responsibility has largely been diverted to end users, or local authorities. While emissions trading schemes place some cost to high emissions industries, they enable existing practices to continue. The sparing use of ETS should be an important principle in this transition. In effect, we need to do more to reduce emissions here in New Zealand, rather than paying people in other countries to offset emissions for us.
- 3. While an individual's behavioural change is important, the emission reduction plan needs to address corporate behaviour that is misguided in thinking that continual growth is possible in a finite world. Too often the commons subsidise environmentally destructive practices while the financial gains from these acts are kept in private.
- 4. The emission reduction plan needs to acknowledge that some industries in Aotearoa are no longer aligned with the world we require or desire, and as such need to be closed. These industries include fossil fuel exploration and extraction, and energy intensive industrial agriculture. A just transition doesn't mean a slow transition. It's not about delaying the necessary changes because of the impacts on people's livelihoods. Change will become harder the longer we put it off.
- 5. A just transition needs to recognise that change is urgent, provide certainty by signaling the direction of change clearly, and provide the necessary support to those affected. We need urgent action. We need to prioritise measures which will reduce vulnerability and make low emissions living easy and affordable for all.
- 6. Changes to the Resource Management Act have seen the removal of protection for urban trees, resulting in large numbers of trees being felled. Urban trees have an important role in fostering biodiversity by providing pockets of natural habitat. We call for the better protection of urban trees. We would like to see greater investment and support for planting native forest species as carbon sinks and to restore native habitat loss.
- 7. We would like to see pedestrian and cycling improvements at a scale similar to England's Cycling and Walking Plan. Public transport should be brough into public ownership to improve driver pay and conditions, so that services can be easily expanded. We would also like to see the provision of free public transport for community service card holders, under 25s and tertiary students in line with the calls from the Aotearoa Collective for Public Transport Equity, fully funded by the central government in Budget 2022. The idea of the '15-minute city' should be implemented, with support for higher density and mixed-use spaces, using design that is supportive of active transport, all supported by high quality public spaces and amenities.



climateconsultation2021@mfe.govt.nz

24 November 2021

Dear Sir/Madam

## ANZCO Foods' Submission Te hau mārohi ki anamata

Thank you for the opportunity to provide feedback on the Government's plan.

ANZCO Foods is one of New Zealand's largest red meat processors, with an annual turnover of \$1.53b and around 3,000 employees throughout New Zealand. We have seven processing sites, two manufacturing sites, a rendering facility, a fellmongery and commercial farming operations. Most of these assets are in rural New Zealand.

Overall the red meat sector is an important part of New Zealand's economy representing \$9.1b in exports to June 2021 which equates to 15% of New Zealand's total exports. We are the second largest export sector and we work with 12,000 New Zealand farmers to source products for the 110 global markets.

ANZCO Foods has made science-based commitments to reducing its carbon footprint. We are also members of the Climate Leaders Coalition and Sustainable Business Council. ANZCO acknowledges that it is early on in its sustainability journey.

ANZCO Foods does not support the approach of all policy driving wholescale transition of land into carbon sinks through exotic afforestation. This will only delay gross emissions reduction and result in a plethora of negative outcomes including loss of biodiversity, a decrease of social wellbeing in rural communities, and a significant decrease in the economic benefits derived from the entire primary industry.

While ANZCO is generally supportive of the Government's plan to transition to a low-emissions and climate-resilient future, we have some feedback on the proposal as it stands.

Yours faithfully

Peter Conley CEO ANZCO Foods

ANZCO Foods Ltd. 5 Robin Mann Place Christchurch Airport Christchurch 8053

www.anzcofoods.com



## ANZCO Foods' Feedback Te hau mārohi ki anamata

- 1. ANZCO Foods acknowledges this plan falls short of both initial proposed emissions budgets set by the Climate Change Commission and the revised Nationally Determined Contribution targets.
- 2. ANZCO advocates for funding and finance policy to support the transition to a low emissions economy, particularly for sectors, such as the red meat industry, which are required to transition earlier than others.
- 3. ANZCO Foods strongly objects to the promotion and intensification of wide scale forestry conversion, as opposed to actual gross emissions reductions. This only seeks to delay emitters from converting whilst negatively impacting on soil, biodiversity, rural communities and export receipts.
- 4. For systematic progression, wholescale investment in a freight transport strategy and subsequent infrastructure is required for industry and supply chain to have sufficient options and alternatives (at an equitable price).
- 5. Decarbonisation efforts are heavily reliant on electricity conversion. Within our own business, we require significant investment in electricity infrastructure to enable our sites to convert to electricity. This needs to be planned and structured at a regional level with government funded support. This will ensure the specific needs of the community are met.
- 6. Government needs to commit to and support a 100% renewable electrical target to ensure the investment in conversion at a business/local level is realised at a national level.
- 7. ANZCO Foods acknowledges methane is responsible for the largest proportion of annual greenhouse gas emissions, however we will continue to advocate for warming impact to be recognised to enable an equitable transition with the greatest climate benefit for all New Zealanders.
- 8. ANZCO Foods advocates for an increase in annual funding to support agricultural greenhouse gas mitigation and transition to achieve reduction targets. ANZCO Foods also requires sufficient time for the primary sector to transition to continue to produce value for the economy and wellbeing for primarily rural communities.

ANZCO Foods Ltd. 5 Robin Mann Place Christchurch Airport Christchurch 8053

www.anzcofoods.com

## **AFRA Emissions Reduction Plan**

# Aotearoa Food Rescue Alliance

## **About AFRA**

The Aotearoa Food Rescue Alliance (AFRA) is an alliance of food rescue groups formed in response to Covid-19. AFRA's purpose is to prevent food waste and nourish communities. It supports members through capacity building, best practice, collaboration and advocacy. It has grown from 17 founding members in March 2021 to 22 today and encompasses New Zealand's major food rescue organisations.



Food rescue has played an essential role in the last eighteen months ensuring those who needed food received it. They rescue food directly from producers or retailers, or receive it from the New Zealand Food Network (NZFN) and then distribute it to recipient charities or New Zealanders in need. AFRA appreciates the opportunity to make a submission on the Emissions Reduction Plan. AFRA is proudly working with Kore Hiakai Zero Hunger Collective, NZFN and Ministry of Social Development to help build the capacity and capability of foodbanks, food rescue and community food services and prevent further shocks to food security in New Zealand. AFRA's members are:

Auckland City Mission Fair Food Free Store Wellington Friendship House Huntly Food Rescue Northland Gizzy Kai Rescue Good Neighbour Halo Charitable Trust Just Zilch Kaibosh Kairos Kaivolution | GoEco KiwiHarvest Kiwi Community Assistance Love Soup, Hibiscus Coast & Love Soup Tokoroa Nelson Environment Centre - KaiRescue Nourished for Nil Rotorua Whakaora Satisfy Food Rescue The Hub Te Puke Waiheke Resources Trust

## Summary

Food rescue turns an environmental problem into a social and economic solution.

AFRA believes there is far greater potential to reduce methane emission from food waste in New Zealand and food rescue should receive greater prominence as an affordable, immediate, high social return on investment climate solution in the Emissions Reduction Plan.

9% of New Zealand's biogenic methane emissions and
4% of our total greenhouse gas emissions are from
food and organic waste.<sup>1</sup>

Food rescue is only mentioned once in the 130 page ERP under 'Initiatives could motivate businesses to look for ways to reduce their food waste and might encourage more donations of food-to-food rescue,' This sentiment is welcome but lacking in ambition and detail.



We also would encourage focus, attention and resourcing on the food rescue side of the equation as businesses already have an economic incentive and social responsibility to reduce waste - the key barrier is a lack of capacity and resourcing for food rescue to transport, store and distribute food.

AFRA notes food rescue is already established, locally-connected, with a national presence and is a more affordable and immediate way to reduce emissions than investments in large scale infrastructure such as landfill gas capture or large scale composting. It can be scaled-up fast and the only limitations are increased capital costs of warehousing, chillers, trucks and ongoing operational costs. Unlike some other food waste alternatives, multiple public goods can be delivered simultaneously. Food rescue has a social return investment figure of between 1:3 and 1:14.<sup>2</sup>

AFRA submits more specific targets, strategies, policies and incentives should be adopted in regards to food rescue.

<sup>&</sup>lt;sup>1</sup> https://environment.govt.nz/what-government-is-doing/areas-of-work/waste/reducing-food-waste/ <sup>2</sup> AFRA is currently working with University of Otago researchers finding a definitive SROI figure for New Zealand.

## Key recommendations

| Set food waste and rescue targets |  |  |
|-----------------------------------|--|--|
| Food waste and rescue<br>targets  | <ul> <li>To support food rescue playing a greater role in achieving New Zealand waste and climate goals, it is recommended:         <ul> <li>Set a food waste target in line with the Sustainable Development Goal 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.</li> <li>Consistent with the waste hierarchy, set a target by 2030 that 80% of surplus food is redistributed to people and by 2050: 100% of surplus food is redistributed to people.</li> </ul> </li> </ul>  |  |
| Actively support food rescue      |  |  |
| National strategy                 | <ul> <li>Develop a national level food waste reduction strategy and implementation plan. Unlike many countries New Zealand does not have a specific food waste strategy and responsibility is split across various central government ministries and departments and local territorial authorities.</li> <li>Continue to increase waste levies to discourage food going to landfill.</li> <li>Prohibit food going to landfill by 2030.</li> </ul>  |  |
| Food rescue funding               | <ul> <li>Make available operational funding for food rescue organisations. Funding, especially for running costs is a major barrier for the financial sustainability and growth capacity of food rescue organisations. Currently some limited funding has been provided through Ministry of Social Development's Covid-19 response however this was only for two years and the Waste Minimization Fund has been oversubscribed and does not allow funding for the ongoing financial support of existing activities, nor is it for the running costs of the existing activities of organisations. Increasing funding and opening it up for operational costs would increase capacity to rescue food.</li> </ul> |  |

|                      | <ul> <li>Open up Emissions Trading Scheme revenue to be recycled for food rescue organisations.</li> <li>The Government should investigate tax credits and incentives for food rescue that are available in many countries and review current taxation rules to ensure food donors are not discouraged.</li> <li>Establish a fund to encourage greater coverage of food rescue capacity in areas without.</li> <li>Continue to fund the Aotearoa Food Rescue Alliance to increase capacity building, best practice, collaboration and advocacy for food rescue organisations.</li> </ul>  |
|----------------------|---|
| Data and information | <ul> <li>Data         <ul> <li>Establish a New Zealand definition of food waste or adopt the global definition.</li> <li>Provide greater funding for data gathering, technology and analysis for food rescue.</li> <li>Gather baseline data for food waste in Aotearoa across all industries including food wasted produced upstream, not just at disposal.</li> <li>Develop a national methodology, capture and reporting platform for food waste.</li> <li>Require large food producers and retailers to disclose how their surplus food is disposed of and how much is distributed to people via food rescue.</li> </ul> </li> <li>Information         <ul> <li>Support greater education and behaviour change campaigns to reduce food waste.</li> <li>Promote the 'Good Samaritan' clause in the New Zealand Food Act 2014, which absolves criminal liability if the food is safe at the time of donation, to encourage greater donation.</li> </ul> </li> </ul> |

## Background

AFRA members are already contributing to New Zealand's greenhouse gas reduction measures.

AFRA surveyed its members before the Delta outbreak, to gauge how they had responded to the initial Covid-19 outbreak and key highlights from the previous twelve months are:

- AFRA members in total increased their food distribution in the 2020/21 year by **90%.**
- More than **8,000,000 kg** of food was rescued and distributed by AFRA members over 2020/21.
- This is the equivalent of **24,776,731** meals and it was distributed to over **1000** recipient organisations getting it to people in need.
- The work of food rescue organisations avoided 22,600 tons of carbon dioxide equivalent entering the atmosphere.

Food rescue has arisen as an organised practise across New Zealand only relatively recently in the last decade.

AFRA members report there are vast quantities of food currently uncollected, in effect wasted in New Zealand. This could end up as compost, in animal feed or releasing methane emissions in a landfill. The lowest emission option will always be to use a material at its highest value state - in this case, eaten as food.

Research in 2017 found that supermarkets created 60,500 tonnes of unsold food annually but only 15% was donated to food rescue groups. <sup>3</sup>

It is estimated every kg of food rescued, avoids 3.5kg of carbon dioxide equivalent entering the atmosphere.

AFRA surveyed its members to see if they were nearing the limits of utilising this resource. 90% indicated they could take more food with additional resourcing, 65% said they could take a lot more.



<sup>3</sup> Champions 12.3 report

https://db921ae9-f665-4304-bd92-a1f22232c2e0.filesusr.com/ugd/d3213e\_e626bfcedbae44c5b081a9 0651a6d427.pdf

## Food rescue support

A major barrier to increasing capacity to rescue more food from being wasted is limited and uncertain funding for food rescue operations. Most food rescue organisations operate in precarious financial positions and are reliant on fundraising, local and national grants. The Ministry of Social Development has released two year limited funding under the Food Secure Communities program, which is ending.

AFRA notes the lack of alternative funding sources available in the short to medium term to support their work. Member feedback identified the amount of time grant writing takes from their core work and how in particular funding for operational costs are difficult.

A case could be made for Waste Minimisation Fund (WMF) funding given the avoidance of waste from landfill. However, this fund does not currently cover operational costs and it is oversubscribed - the most recent round saw only \$12m dispersed out of \$150m in applications. The waste levy is increasing but the Waste Strategy needs to be consulted on and confirmed, the Waste Minimisation Act amended by Parliament and strategic funding decisions made all before increased future funding can reach food rescue organisations. Our members have highlighted the uncertainty around timings for the fund which are still unclear. AFRA submits immediate operational funding is required to keep and enhance capacity.

## Recommendations

- Make available operational funding for food rescue organisations.
- Open up Emissions Trading Scheme revenue to be recycled for food rescue organisations.
- The Government should investigate tax credits and incentives for food rescue that are available in many countries and review current taxation rules to ensure food donors are not discouraged.
- Establish a fund to encourage greater coverage of food rescue capacity in areas without.

## **Targets**

AFRA is comfortable with the proposed methane targets but notes New Zealand should increase its ambition in light of the methane pledge signed at the Glasgow COP26 and believe food rescue will be an effective partner in reducing emissions.

If all the supermarket food unsold, cited in the 2017 study could be hypothetically rescued,

that would mitigate 211,750 tonnes of carbon dioxide equivalent.

AFRA submits the ERP should develop a specific food target.

## Recommendations

- To support food rescue playing a greater role in achieving New Zealand waste and climate goals, it is recommended:
  - Set a food waste target in line with the Sustainable Development Goal 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
  - Consistent with the waste hierarchy, set a target by 2030 that 80% of surplus food is redistributed to people and by 2050: 100% of surplus food is redistributed to people.

## Food strategy

Food waste is not only an environmental issue, it is a societal tragedy that good, nutritious food is sent to animal feed or landfill in a country where:

• One in five children in New Zealand live in households experiencing moderate to severe food insecurity

• Almost 40 percent of adults and 19 percent of children in New Zealand don't have enough food.<sup>4</sup>

• About 33 percent of New Zealand adults say they face moderate food insecurity, experiencing uncertainty about whether they'll have enough food, or choosing cheaper, often nutritionally poor items.<sup>5</sup>

As an agricultural producer New Zealand regularly experiences surpluses of a particular food type because of overproduction or cancelled export orders.

Unlike many countries New Zealand does not have a specific food waste strategy and responsibility is split across various central government ministries and departments and local territorial authorities.

A food waste strategy could help break down department barriers and work with producers, retailers, iwi and hapu, local government, NGOs, consumers and food rescue organisations to develop a holistic approach. The United Nations Environment Program recommends strategies based on the target, measure, act framework.

<sup>&</sup>lt;sup>4</sup> https://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-v2.pdf https://www.rnz.co.nz/news/whoseatingnewzealand/447324/calls-to-feed-the-5-million-first-before-ex porting-nz-food

AFRA notes in March 2020 the Environment Select Committee conducted a briefing into food waste and recommended:

- We recommend that the Government adopt a national definition of and measure of food waste, in line with international approaches.
- We recommend that the Government include reducing food waste with a reduction target as part of a national waste strategy and implementation plan.<sup>6</sup>

These recommendations have not been enacted yet and a national food strategy would be a good vehicle to deliver on them.

## Recommendations

- Develop a national level food waste reduction strategy and implementation plan.
- Continue to increase waste levies to discourage food going to landfill.
- Prohibit food going to landfill by 2030.

To achieve the outcome of no food going to landfill AFRA notes the need for significant resourcing of food rescue groups to achieve this.

## **Data and Information**

Climate outcomes will be dependent on good data and good policy intention is built on acting on what is measured.

AFRA submits significantly more needs to be done in this space to support the work of those doing the mahi on the ground.

AFRA notes it was unsuccessful for Waste Minimisation funding for a data project and has had to turn to philanthropy for this public good.

## Recommendations

- Data
  - Establish a New Zealand definition of food waste or adopt the global definition.
  - Provide greater funding for data gathering, technology and analysis for food rescue.
  - Gather baseline data for food waste in Aotearoa across all industries including food wasted produced upstream, not just at disposal.

https://www.parliament.nz/resource/en-NZ/SCR\_96164/cebeaf7cf20b40245fdf5c60601d83a2ac5b105 f

- Develop a national methodology, capture and reporting platform for food waste.
- Require large food producers and retailers to disclose how their surplus food is disposed of and how much is distributed to people via food rescue.
- Information
  - Support greater education and behaviour change campaigns to reduce food waste.
  - Promote the 'Good Samaritan' clause in the New Zealand Food Act 2014, which absolves criminal liability if the food is safe at the time of donation, to encourage greater donation.

## Ending food waste to landfill

AFRA supports this proposal raised in the draft ERP but recommends greater public resourcing for food rescue organisations will be the key to achieving it.

AFRA notes overseas, landfill bans are used to control organics being disposed of in landfills and promote sustainable alternatives. The Waste and Resources Action Programme (WRAP) completed a cost-benefit analysis of landfill bans in the UK and found that bans based around organics, metals and glass delivered climate change benefits and resource efficiency gains. In Massachusetts, the state's organic waste ban supported over 900 jobs in the organic waste hauling, processing and food rescue industries in 2016 and generated \$175M in industry activity.<sup>7</sup>

## Specific questions relating to AFRA

89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

Yes, this is ambitious but will take significant resourcing for those food rescue organisations doing the mahi to achieve it.

90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food,

7

https://www.cgcsa.co.za/wp-content/uploads/2021/04/Policy-and-Regulations-Round-Table-Meeting-1 6-04-21.pdf

## cardboard, timber)?

Yes, we support greater funding for Love Food Hate Waste and similar initiatives.

91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

AFRA submits turning an environmental problem - food waste, into a social and economic solution - rescued food is a win-win and should be more actively encouraged and supported.

92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

Yes as long as greater public resourcing for food rescue organisations will be available to achieve it. A national strategy and targets need to be in place and the capacity of food rescue groups needs to be increasing in the years prior.

93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

Yes, ideally no food would go to any landfill.

95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

Yes, greater at-source separation would assist food rescue's work. AFRA also supports greater data transparency for large corporations to provide greater system information.

99. What other options could significantly reduce landfill waste emissions across Aotearoa?

Please consider the substance of this submission as a comprehensive answer to this question.

## Summary

AFRA welcomes the chance to submit and recommends greater practical policies regarding food waste and food rescue are adopted. AFRA is available for any follow-up consultations or additional information.

#### Transitioning to a low-emissions and climate-resilient future.

#### Introduction.

was incorporated in 2006 as a quality air-conditioning, ventilation and refrigeration product and services provider. specialises in the design, installation, service & maintenance of <u>commercial HVAC (Heat, Ventilation & Air Conditioning) systems.</u>

Contact Person : Contact Number:

#### Overview

supports any initiatives to further reduce New Zealand's greenhouse gas emissions. We recognise the environmental need to "speed up" up the phase down of F-Gas, beyond the levels previously agreed to under the Kigali Amendment to the Montreal Protocol.

Our support to the achievement of that overall objective is dependent upon the introduction of robust and effective policies that are not only technically feasible, but that will also provide businesses with the certainty required for on-going investment within the sector.

Our submission to the discussion document is confined to those parts specific to F-Gas's and the plans to further reduce emissions of HFCs.

We note that existing controls around the use of HFCs are heavily weighted toward import controls and submit that more needs to be done to conserve the existing refrigerant bank which is estimated to be some 8,000 metric ton.

Annually New Zealand imports approximately 500 ton of refrigerant contained within pre-charged equipment such as domestic heat pumps, refrigerators, and cars.

To support the sector, we import a further 500 ton of bulk refrigerant annually – most of which is subsequently lost to atmosphere through leakage.

If we assume an average GWP of 2000, then that 500 ton of bulk refrigerant would equate to 1,000,000 tCo2eq. lost to atmosphere. Annually.

Much of this loss would be preventable if NZ were to adopt better <u>statutory</u> management of HFCs such as is afforded under the European F-Gas regulations.

Ignoring opportunities to better manage the existing refrigerant bank will result in New Zealand failing to address one of the largest sources of HFC emissions, and by extension will further exacerbate the negative effects that the discussion document proposals will impose upon existing businesses, dependent upon the on-going availability of HFCs to support their activities.

#### Table 8: Draft Schedule for phase out of goods and systems containing high GWP refrigerants.

#### • New Goods and systems.

Apart from companies such as Scope Industries, TemperZone, and Fisher and Paykel, New Zealand is primarily an importer of manufactured goods containing refrigerants.

Over recent years, international manufacturers have progressively moved toward the use of low GWP refrigerants, and consequently, we have no real issue with the proposals to limit import based upon application type and GWP.

We do see possible issues for the used motor vehicle sector but will leave comment upon that to those better equipped to do so.

New built *Commercial refrigeration systems* having capacities of less than 40KwR will be a challenge not the least of which has been noted within the discussion document – *limited non-flammable options.* 

Whilst personnel safety is not an MfE responsibility, the transition toward low GWP refrigerants will inevitably require the use of more hazardous substances, and such is the importance of the issue, we will discuss under separate heading.

#### Servicing.

The successful design of an energy efficient refrigeration system requires the careful selection of all interrelated componentry to match the characteristics of the chosen refrigerant.

Compressors are selected to match the refrigerant specific volumes and interconnecting pipework is sized to achieve required mass flow rate. Retrofitting to a different refrigerant type will inevitably alter that balance, resulting in a compromise to system efficiency.

We hear the term "drop in" used extensively and note it being used within the "servicing" section of the discussion document. To repeat, no retrofitted plant will operate as efficiently as it did when it was operated with the refrigerant that it was designed to work on.

Not all refrigerants are the same. For example, whilst refrigerants R513a and R134a are *similar* refrigerants, they have quite different thermodynamic properties. R404a and R410a are totally incompatible to each other, and so on.

The authors of *table 8* are suggesting R466a be used as a substitute to R410a for use within residential air conditioning and heat pumps. R466a has yet to be released to international markets by its manufacturers and has not yet been approved for use by any of the OEM equipment manufacturers.

Indeed, thus far, we are not aware of <u>*any*</u>drop- in replacement non-flammable refrigerant for systems designed to operate upon R410a, regardless of GWP.

R410a based air conditioning equipment is being sold today, complete with extended warranty terms that in some cases extend out to 7 years. Without access to suitable refrigerants to service that equipment, contracting companies will be at a serious disadvantage with the Commerce Commission.

Equally, We don't have available low GWP refrigerants capable of operating at temperatures of between -25°C and -50°C. Perhaps the ministry could investigate the issuance of some form of permit that might allow suitably qualified personnel to have access to limited amounts of suitable refrigerants to maintain this specific plant?

Noting the exceptions around the inevitable drop in system efficiencies referenced above, *for the proposals intended for introduction in 2023*, in general, we agree with the GWP limits being imposed upon the *servicing of existing equipment*. The proposals for 2032 are of considerable concern. The authors note that without exception, the introduction of the target maximum GWP limits will "*likely signal the need for total equipment replacement*.

Whilst that may be of less concern for owners of appliances such as refrigerators or domestic heat pumps, 2032 is a very short time frame for the owners of commercial refrigeration plant to be suddenly having to consider replacing their equipment.

#### **Regulatory Framework.**

One of the inescapable features of low GWP refrigerants is that they are either Flammable, Toxic or Operate at Very High Pressures.





The current New Zealand refrigeration industry is almost entirely un-regulated, both of the individual technicians through to the PCBU's / equipment owners. One could

argue the H&S regulations afford some restrictions upon who can do what, but these are largely un-enforced with the sector with consequent widespread non-compliance.

Our apprentice training programs to not currently include content specific to the use of Flammable, Toxic or High-Pressure refrigerants. Our industry is simply not equipped or resourced to support the widespread use of these refrigerants, but support them we must.

Whilst H&S are beyond the scope of MfE, a "whole of government" approach is urgently needed to ensure the industry is able to achieve its goals of reducing our carbon emissions, whilst at the same time protecting the technicians, the PCBU's and the public at large. The risk to human life is real and imminent.

We are participated in the MfE Synthetic Refrigerant Stewardship Working Group and contributed to the creation of the Product stewardship Scheme. Whilst this scheme has the potential to impact upon the collection and disposal of waste synthetic refrigerants, it is hard to it impacting upon the protection of the existing refrigerant bank, nor for the safe introduction of the High-Pressure, Toxic, or Flammable refrigerants.

As discussed elsewhere within this submission, there are some 8,000 ton of synthetic refrigerants currently operating within plant across New Zealand today.

All imported domestic heat pumps, cars, and refrigerators that come into the country are already charged with refrigerant, but each year something like 60% of all bulk imports of refrigerant are used to maintain that plant. Refrigerant leakage within this sector is endemic.

HFC's are powerful greenhouse gasses with extraordinarily long atmospheric life spans when released to atmosphere.

The IPCC 5<sup>th</sup> GWP Assessment Report measures the global warming potential of specific refrigerants over a 100-year time frame. It simply makes no sense to us to allow un-trained and un-regulated people access or use these powerful chemicals.

New Zealand should urgently adopt the EU F-Gas regulations that require all PCBU's record and report to MfE, all synthetic refrigerant usage – by specific plant and site location, together with explanation as to the usage.



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24 November 2021

Ministry for the Environment

By email only: climateconsultation2021@mfe.govt.nz

Kia ora

Thank you for the opportunity to make a submission on the Emissions Reduction Plan (ERP).

## About ACE New Zealand

The Association of Consulting and Engineering New Zealand (ACE New Zealand) is a firm-based membership organisation representing over 230 professional services firms working across the built and natural environment – from large global firms to employee-owned SMEs.

Our members employ approximately 13,500 staff, including engineers, project managers, planners, scientists, architects, surveyors and other technical disciplines. Our teams work together to advise, design and deliver on critical technology, policies and practices, and construction and infrastructure across the built and natural environment in Aotearoa. They are at the frontline delivering new technologies and innovative approaches to meeting Aotearoa's emissions reduction goals.

For our members it is critical that government is thinking beyond what we need to do to achieve our emissions reduction goals, but also to how we set ourselves up well do it. ACE New Zealand's voice for its members in this korero centres on creating the right settings across our businesses and market sectors to enable emissions reduction. This includes addressing current and future workforce challenges, creating the right commercial settings to allow innovation to flourish, and that we are choosing the right projects and have the right regulatory settings in place. Government has a key role in supporting the sector in these areas, in the interests of meeting our emission reduction targets.

## Size of the infrastructure task

To meet our emissions goals, we will need to transform the homes we live in, the transport systems we use, the industries that drive our economy, and how we supply them all with energy. Each of these implies many infrastructure projects – some in the multi-billion-dollar scale (such as light rail), some much smaller but in huge numbers (such as retrofitting housing).

Alongside this, the next 30 years are projected to see continued population growth, with the Infrastructure Commission estimating another 1.7m people living in New Zealand cities by 2050 – creating infrastructure demand equivalent to a new Auckland. At the same time, a large proportion of existing infrastructure will need to be replaced (where it has reached the end of its life) or retrofitted to enable our zero-carbon target.

This will be the largest infrastructure programme this country has ever undertaken. The Infrastructure Commission estimates it will cost around 9.6 per cent of GDP over a 30-year period (equivalent to around \$31 billion per year) and almost double what we currently spend.

Professional services in the engineering sector are critical to meeting our emissions reduction targets. Our members are driving the innovation and technology behind the design and practices that will enable us to meet emissions reduction in the construction and infrastructure sector.

## Workforce

Workforce capacity is already a major challenge in the construction and infrastructure sector. This is only set to increase in the medium to long term as we welcome large financial investment in critical projects to address our infrastructure deficit and to decarbonise. Without the required workforce, some infrastructure will not be delivered, and our decarbonisation plans will be significantly affected.

<u>The results of a recent survey showed</u> there are 3229 current vacancies across 135 firms in the construction and infrastructure sector. Employers are experiencing significant difficulty filling these positions from the New Zealand market and are either receiving no applicants for advertised positions, or not the right applicants. Ninety per cent of firms are having difficulty recruiting in New Zealand, with 66 per cent getting no domestic applicants.

To fill these skills gaps we need to look at short, medium, and long-term strategies. Our short-term strategies lie in supplementing the current market with overseas talent, and our medium to long term strategies lie in growing and upskilling local talent.

There will be enormous international demand for specialist staff with skills relevant to low-carbon infrastructure and decarbonisation and we need immigration settings that support attracting these skills into Aotearoa. We will also have to supply as much of that workforce domestically as possible, given the level of international demand. That means more education on core skills relevant to professional services and engineering throughout our schools, support for larger tertiary intakes, and better pathways from training to work through tertiary and vocational education. This requires considerable investment from government and industry together, and we welcome the opportunity to talk with Government about how to deliver this so that we have the skilled workforce we need to deliver to our emissions reduction targets.

## Procurement

Procurement is a lever to drive better outcomes, including in our climate responsibilities. As the largest procurer of construction and infrastructure services government plays a critical role in creating and supporting commercial environments where innovation and carbon reduction practices can flourish.

A recent example of the Government using its procurement power positively to tackle emissions has been the announcement that from 1 April 2022, new non-residential government buildings with a capital value over \$25 million will have to meet a minimum Green Star rating of five, boarding to all new non-residential government buildings with a capital value over \$9 million from 1 April 2023.

It is important that work on improving procurement processes doesn't result in a race to the lowest cost. As noted in Infrastructure New Zealand's 2018 report *Creating Value Through Procurement*, a funding and procurement environment that rewards least cost offers and risk-shifting ends up exposing all parties to higher whole-of-life cost. A lowest cost focus will often be inimical to climate change objectives – low-carbon options may involve more complex and costly design and engineering, as well as new technologies, innovations, and construction practices that can add to cost.

If we want to ensure we have strong businesses and a strong sector to deliver to our emissions reduction challenges, then we need to think carefully about the contractual frameworks we are working to. We would like to see more consistent and widespread use of industry-accepted standardised contracts that ensure risk and liability are fairly apportioned to the parties best able to manage them. This will allow innovation, increase productivity, reduce costs, ensure parties clearly understand their obligations, and that risk is allocated fairly. This means government ensuring that the commitments to fair contractual settings as laid out in the

Construction Sector Accord are amplified and honoured across all tranches of its business. Currently, we see a gap between the Accord's commitments and practice.

## Greening the infrastructure pipeline – choosing the right projects

A vital first step to helping achieve this enormous infrastructure task is to stop building infrastructure that is incompatible with our climate goals.

For example, many transport projects on the books still don't contribute to sustainability (eg enabling sprawl or freight movement by truck). To that end, we welcome the proposal to "Ensure further investment in additional highway and road capacity for light private vehicles is consistent with climate change targets" and complement Waka Kotahi on their recent thinking in this space. If this will apply to currently planned projects, we request early and decisive decision-making to prevent waste of effort and money.

We are pleased that Rapid Transit is a very high priority, and we support its role in mode shift to reduce vehicle emissions. Increased operational funding for buses and behaviour change programmes and bigger sticks like pricing should also be high priorities to further reduce vehicle emissions and volumes.

We would like to see a similar level of ambition regarding building and construction, including rapid implementation of the Building for Climate Change energy efficiency standards. The energy use in buildings, both new and existing, is projected to cause more emissions over the coming 30 years than the embodied carbon emissions over the same period. It makes sense, therefore, to prioritise energy efficiency as a measure to reduce emissions that often has negative lifetime costs (albeit with significant initial capital investment).

We welcome the proposals to reduce construction waste and increase reuse, repurposing and recycling of materials as ways to reduce the carbon embodied in infrastructure projects.

## Regulation that keeps up with the pace of change

Meeting our emissions goals requires new innovation, including in materials and practices. We need to ensure that our regulatory settings are principle-based and flexible to enable innovation and support the adoption of new technologies and techniques. As new, low-carbon construction materials - such as low-carbon steel, low-carbon cement, and wood products - and low-carbon building practices become available, regulators will need to be prepared to move rapidly to allow their use.

## Summary

In summary, it is critical that government is thinking beyond what we need to do to achieve our emissions reduction goals, but also to how we do it. For our members, that means taking steps now to work with industry to address our current and future workforce challenges, to realise the potential of procurement and the important role it plays in creating the commercial frameworks that will allow innovation for decarbonisation to flourish, and that we are choosing the right projects and have the right regulatory settings in place.

Please feel free to get in touch if you would like to discuss any aspect of this submission. We welcome the opportunity to input into government responses in these key areas.

Nga mihi,

Helen Davidson Chief Executive

#### Consultation on The Emission Reduction Plan ("ERP")

# Submission in response to *Te Hau mārohi ki anamata: Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan* ("the Consultation Document")

"He Kākano ahau, I am a seed. He kākano conveys growth, development, and expansion. Even before a seed is planted or nourished, it has inherent promise to take root, emerge, and flourish. A person, like a seed, is intrinsically linked to generations who have gone and are yet to come. He kākano derives from somewhere, belongs to something, and cannot be isolated or detached from its whakapapa. In this manner humans are kin with creation and we are to accept that our existence is accountable to all forms of life, and not to ourselves alone. We are to concede that we must not knowingly cast ourselves above another to claim what is to primarily provide for all. As our inner seed stirs let us collectively grow ourselves for the common good of all living things."

> **Rev. Jacynthia Murphy** Local Shared Ministry Kaiwhakamana (Enabler) Anglican Diocese of Auckland

## The Submitter: The Auckland Anglican Response to the Climate Crisis Collaboration (AARCC) Group of the Anglican Diocese of Auckland

The AARCC is a diocesan working group within the Anglican Diocese of Auckland seeking to support our diocese and churches to reduce our carbon emissions, educate our community about climate justice, support our community to engage with environmental concerns ('care of creation'), reach out to our community and engage in advocacy. We bring to this submission our experience of serving in our local communities and leading faith communities, as well as our professional experiences and previous submissions to Government and Auckland Council, and 15 years of education to our churches on climate change.

Our diocese is part of Anglican Church of Aotearoa New Zealand and Polynesia, which is a Christian organisation that covers New Zealand, Fiji, Samoa and Tonga. As part of its faith commitment, one of its five marks of mission is 'to strive to safeguard the integrity of creation, and sustain and renew the life of the earth.'<sup>1</sup> It does so in a number of ways, many of which are recorded in this submission.

The Anglican Church in Aotearoa, New Zealand and Polynesia is unique in that it is made up of three self-determining (but always in dialogue with each other) cultural strands: Tikanga Pākehā, Tikanga Māori and Tikanga Polynesia. This makes it uniquely placed to appreciate the climate change impact

<sup>&</sup>lt;sup>1</sup> <u>Marks of Mission (anglicancommunion.org)</u> (as at 3 November 2011). Archbishop Justin Welby, head of the Anglican church worldwide recently signed the "Joint Message for the Protection of Creation" re-committing the church, along with the Catholic Pope and 40-odd other faith leaders to working towards tackling climate change., at < <u>Messaggio congiunto del Santo Padre Francesco, di Sua Santità Bartolomeo I, Patriarca Ecumenico di Costantinopoli, e di Sua Grazia Justin Welby, Arcivescovo di Canterbury, per la protezione del Creato (vatican.va)> (3 November 2021).</u>

of its partners in Aotearoa New Zealand and the Pacific. It also means that the Anglican Church is often in dialogue between Te Tiriti partners in order to help support and implement culturally-based practices and initiatives pursuant to *Te Tiriti o Waitangi*.

#### We are submitting on the Emissions Reduction Plan because:

1. The Anglican Diocese of Auckland passed the following resolution at our recent Synod in November 2021:

"THAT this Synod:

- Acknowledges the significant work of *He Pou a Rangi Climate Change Commission* in the preparation of the report, "*Ināia tonu nei: a low emissions future for Aotearoa New Zealand*" outlining New Zealand's direction for an emissions reduction plan 2022-2025.
- Calls on the New Zealand Government to urgently implement recommendations in this report in the Government's Emissions Reduction Plan."
- 2. The Anglican Diocese of Auckland in 2019 deemed the following motion on the Sustainable Development Goals to be a Standing Resolution:

"THAT this Synod supports the seventeen Sustainable Development Goals (SDGs) which are a global call to action to end poverty, protect the planet and ensure all people enjoy peace and prosperity by 2030."

3. Accordingly we, as a faith community, speak from the mandate of our 2021 Synod resolution, our 2019 Standing Resolution and our Mission Statement to work with urgency for a more sustainable low emissions economy in Aotearoa New Zealand as we consider the matters covered by this consultation.

#### Previous submissions and positions:

- 1. The Anglican Diocese of Auckland's Social Justice Group made a submission to the Climate Change Commission's consultation process in January 2021. As a diocese we support the recommendations of the Climate Change Commission and wish to see the recommendations urgently implemented. This submission has been attached as **APPENDIX 1**.
- 2. The Anglican Diocese of Auckland is also a signatory to the Statement to the Government on the Nationally Determined Contribution (NDC) to the Paris Agreement for COP26 in Glasgow, Scotland in November 2021 from the Religious Leaders and Interfaith Groups of Aotearoa New Zealand. We appreciate that New Zealand has increased our NDC to 50% reduction in 2005 levels by 2030. We continue to stand by the other recommendations within the statement. This statement has been attached as APPENDIX 2.

3. The Anglican Diocese of Auckland's young Anglicans for social justice group ('ADJust') has also joined the coalition of organisations behind the Free Fares Campaign. We are asking for free public transport across all of Aotearoa, at all hours and days, for Tertiary Students, Community Services Card holders and Under-25s.

#### Scope of this Submission

We support the broader intentions of this consultation but express disappointment in the government's extension for the release of the full Emission Reduction Plan to May 2022.

Our communities are tired of consultation after consultation with minimal tangible progress towards a plan that will shift New Zealand to a low-carbon future. Consultation can happen in the midst of action; they should not be mutually exclusive processes.

This submission builds on the previous submissions and positions we have already taken as a diocese (please see Appendices 1 and 2). In this submission we focus on sharing the efforts our diocese has made to move our organisations and communities towards a low carbon future, and offer suggestions as to how the Government could support our communities through these initiatives and efforts.

These ideas and suggestions come from our experience of working in our local communities and the grassroots opportunities that our volunteers have seen and spoken of. We also address some of the areas in the consultation document as it relates to our activities and area of focus.

#### **Behaviour Change**

#### What Auckland Anglican Diocese is doing

- Employs a part-time Sustainability Fieldworker to support sustainability initiatives and work with volunteers in parishes ('Sustainability Champions').
- Organises annual workshops with Sustainability Champions from our different churches focusing on different sustainability themes such as Zero Waste.
- Encourages and creates resources for an annual church focus on 'creation care' actions and practices called '*Season of Creation*' during the month of September.
- Works with other organisations such as *A Rocha* and the *Eco-Church* movement to embed sustainability and climate justice into our communities.
- Offers opportunities for environmental education and 'care of creation' theology for clergy and other church leaders.
- Posts video and other content on social media to educate and encourage church communities in their environmental efforts.

#### How can the government support?

• Build awareness of what causes carbon emissions and what community organisations can do to mitigate them. We suggest that if the government produces plain language, interesting communications around this, that would be beneficial. *GenLess* resources have been useful to a degree, however we feel that there is a significant gap between these resources and the communities they are trying to engage.

- Guidance around voluntary emission offsetting would be very useful for community organisations.
- Provide funding for organisations such as A Rocha to run programmes such as the Eco-Church project (<u>http://ecochurch.co.nz/</u>). This project is seeking to mobilise and build a network of churches with a focus on sustainability. Projects such as this have the potential to engage specific communities. There is a proven track record for tangible action and outcomes from the UK Eco-Church project.
- Offer small scale local funding for community projects that bring together local organisations for the purpose of environmental education and collaboration. St Andrew's church, Pukekohe has been working with the *Community Networks Franklin* in various community initiatives and they are jointly planning a sustainability expo' for 2022. Funding is often best disbursed at the local level by local boards and councils.
- Include Community Sustainability Education within the 'Jobs for Nature' programme.

#### **Circular Economy and waste**

#### What are we doing?

- Working with *Para Kore* and *A Rocha*, we are encouraging churches to sign up to the Zero Waste Church Programme.
- As a diocese, we are asking our churches to set targets to reduce their waste as part of church activities and as a community venue.
- Churches run charitable op shops and church fairs which means that unwanted items get a second life.
- Churches are often involved in food banks and food rescue initiatives and hosting pātaka kai.
- Some churches host compost systems that are available for the public to drop off organic waste.
- Some churches have explored becoming terracycle hubs and offer e-waste drop off events.

## How can the Government and local Councils support?

- Churches are ready made community hubs with the potential to promote and educate people about a circular economy and how people can take part. It is often difficult to know what to do with waste and the options available for recycling. More regularly updated and localised resources for this would be hugely helpful.
- We urgently need Councils across the country to implement kerb-side collection for organic waste especially in urban centers where there is limited space for household level composting.
- Supermarkets, food producers and food transport companies need to assess their food waste and explore efforts that can be made to reduce food waste and also address organic waste emissions. Companies should first and foremost attempt to redirect good food to food banks and other food rescue initiatives, before considering composting options.
- Funding of organisations such as EcoMatters Environmental Trust <u>EcoMatters Environment</u> <u>Trust - Love Your Environment</u> by local government enables churches in certain areas to apply for grants to set up composting, gardening efforts and community pantries. We would like the Government to ensure that funding is increased to *EcoMatters* and similar organisations.
#### <u>Transport</u>

#### What are we doing?

- The diocese encourages its staff and the people of its parishes to car-pool, use public transport and cycle and walk where possible, and use video-conferencing for meetings to cut down on unnecessary car trips and emissions.
- Some churches are installing cycle racks to encourage cycling by parishioners and the public.

#### How can the Government support?

- As mentioned above, *ADJust* has joined with a coalition of organisations calling for free public transport for Community Service Card holders, tertiary students and under-25s, so that more people on low incomes can be better off from the low-carbon economy. In short, we would like public transport systems that are accessible, affordable and sustainable.
- Our rural and small town church communities struggle with the impractical nature of public transport in these spaces. There is significant potential for cost effective public transport in rural and small towns that serve people first and foremost.
- The need to electrify our transport system is urgent and the infrastructure such as EV charging stations need to be systematically and rapidly developed to match the current access to petrol.
- Some churches are open to hosting EV chargers, however the process and cost required to install such a charger for public use is often inaccessible to small rural church communities where they might be most strategic. It would be helpful for the Government to provide a simple programme for community organisations to host charging units at minimal cost.

#### **Building and construction**

#### What are we doing?

- The Anglican Church owns many heritage buildings and this often makes it difficult to make significant changes to buildings. Upkeep of our heritage buildings takes up significant church resources.
- 10 church buildings were assessed by an architect to explore measures to make our buildings more sustainable and energy efficient focusing on heating, lighting and water. These reports are available to all churches.
- Church building and renovation projects are required to report on sustainability outcomes and considerations.

#### How can the Government support?

- We note the guide for small businesses to reduce their carbon footprint entitled "Sustainable Business Network Climate Action Toolbox.". It would be helpful to have a similar guide for community/faith-based organisations that include aspects such as community education.
- We support mandatory participation in energy performance programmes for public and commercial buildings and support for the community sector to voluntarily engage in these measurements.

- Capping total carbon emissions of building projects is absolutely necessary. The government needs to support schools and public institutions to shift away from fossil fuel demand in buildings, immediately phasing out coal boilers.
- The Auckland City Mission building 'HomeGround' demonstrates what is possible when building with timber. The Government could support initiatives for low carbon, sustainable community and public buildings.
- Support to install solar panels on public and community buildings would be welcomed by the church and community organisations. This could take the form of an interest-free loan for the installation of solar panels or a matched funding grant.

#### Forestry and local food

#### What we are doing:

- Various churches have been involved in local tree planting events and diocesan staff have held tree planting as a community day with *Matuku Link*.
- Some of our urban churches host community gardens, and rural churches such as the Anglican Parish of Bombay-Pokeno have dedicated land to grow kumara for food banks. St Brides Mauku has been doing native regeneration on their land in collaboration with Auckland Council, iwi and local organisations.
- THE NATIVITY PROJECT 2021: re-GENERATION A joint initiative from The Friends of Holy Trinity Cathedral and ADJust will focus on the importance of supporting the unique eco-system of Aotearoa by fundraising for Trees That Count plant native trees.

#### How can the Government support?

- Iwi and community organisations such as *Forest and Bird* have a long-term interest in maintaining native forests and restoring natural ecosystems and habitats. These organisations should be supported to maintain existing native forests, and also in afforestation efforts. We also see an important role that these conservation trusts can play, in acquiring strategic private lands for native regeneration, both in rural and urban contexts. DOC could work more closely with these organisations and iwi to fund the acquisition of land for conservation and carbon sink purposes.
- Local councils could and should be supported to assess their park and land portfolio to identify opportunities to re-forest and invest in food forests and native forests. These efforts are often beneficial to local ecosystems and local people too. In Auckland it has been disappointing to lose some of the protections provided to significant trees and urban forests prior to the Auckland Unitary Plan.
- Protection of significant trees must be reinstated, for both their carbon sequestration potential and their inherent spiritual value to communities.
- We see an untapped potential in urban food forests and the carbon sequestration benefits that they could provide. More research could be done into this area to support local organisations to invest in building and growing food forests in public and community spaces such as schools, churches and parks.

There is great urgency for New Zealand and our global community to reduce our carbon emission significantly by 2030. We expect great things from the Emission Reduction Plan as the time to act for a safer future is narrowing. We need to see strong leadership from the government to provide the

infrustructures, pathways and resources for our communities to truly move to a low carbon future that is more socially just and leaves no one behind.

To belong to the generational seeds of life, in harmony with all other life, is to each flourish and prosper. This is our blessing from the Creator. He kākano ahau. Nō reira, kia tau te rangimārie ki a koutou. Peace be with you.



#### Parnell, Auckland

### **Social Justice Group**

#### Response to Climate Change Commission January 2021 Proposals

#### **Commission Question One: Guiding principles**

We generally agree with the Principles set out but do have concerns about Principle 4 about "unnecessary cost" as this can be used by interest groups to delay and possibly stop changes that are vital to New Zealand achieving the 2030 and 2050 targets. Assessing if a particular cost is necessary or unnecessary is very subjective. The cost of not acting also needs to be included in all assessments of the costs of proposed actions to achieve our targets.

When looking at so called stranded assets it will be necessary to look at when the investment decision was originally made. For example, the major contribution of fossil fuels to climate change have been known to the oil companies since the mid-1980s, thus it would be unnecessary to consider the impact of "stranding" of any assets acquired since then.

We suggest this principle be reworded as follows:

Principle 4 Assessing the costs of action and inaction

In assessing costs of proposed actions to achieve the 2030 and 2050 emissions targets estimates of the cost of not taking action will be included in the assessment. In assessing the economic impact of closing down assets that contribute to greenhouse gas emissions and any possible recompense the owners of the asset may receive consideration shall be taken of the date the investment was made and the knowledge available at that time about the adverse impact the investment would like to make.

#### **Commission Question Two: Emission Budget levels**

Yes

#### **Commission Question Three: Breakdown of Emission Budget**

This table is a bit confusing. Why is the target for methane higher for 2025-30 than for 2021-2024? And the target for 2035 is above 2024? We do support the splitting up of the various greenhouse gases particular methane and the major source of methane is clear and will require specific mitigation policies.

#### Commission Question Four: Limit of off-shore mitigation for Emissions Budget

We strongly support Aotearoa resisting going to offshore sources to mitigate our onshore emissions even by 2050. We need to plan and achieve carbon neutrality for ourselves without exporting some of our problems even if it means major changes to our way of living.

#### **Commission Question Five: Cross-party support for Emissions Budget**

Whilst cross party support for actions taken to mitigate climate change is important, it is more important that each political party's position on the policies required to mitigate climate change are clear and on the record. We support the Commission's position.

#### Commission Question Six: Coordinated efforts to address climate change across Government

We support your recommendations in particular the recommendation that a Vote Climate Change be used that encompasses all expenditures to mitigate climate change. We would also suggest that in presenting Vote Climate Change the government also indicate the likely cost of not acting.

#### Commission Question Seven: Genuine, active and enduring partnership with iwi/Māori

We strongly support the involvement of Māori in all aspects of the Commissions work including the recommendations the Commission makes to Government. No recommendation should be made without Māori support.

#### Commission Question Eight: Central and local government working in partnership

We support this recommendation.

#### Commission Question Nine: Establish processes for incorporating the views of all New Zealanders

The issues raised by the Commission in this question are important and the methods chosen by both the Commission and Government to ensure wide involvement by New Zealanders is important. The concept of some form of Citizens' Assembly as recommended by the Commission needs to be developed by the Commission as no other arm of government is likely to do it.

#### Commission Question Ten and Eleven: Locking in net zero

We strongly support the concept of "locking in net zero" and would support moves towards negative greenhouse gases emissions from 2050 onwards.

Moving to planting native trees and away from exotic forests makes great sense and we support the recommendation. We would assume that much of the land suitable to planting native forests is already government controlled. This should enable reasonably quick action. It may be worth investigating some form of incentive for privately owned land, including Mãori land, to be planted in native trees. The long term increase in native forests in Aotearoa will also held increase biodiversity.

#### Commission Question Twelve: Our path to meeting the budgets

The information in Box 3.1 is complex and in some areas contradictory. This makes it difficult to comment constructively. We would be very concerned at any slowing of the move away from fossil fuelled vehicles to electric and hydrogen powered vehicles and would recommend that the importation of fossil fuelled vehicles after 2028 be banned. This would still leave a large number of relatively cheap fossil fuelled vehicles available to persons unable to afford electric/hydrogen vehicles. It would also mean that more second-hand electric vehicles would be available.

Has the Commission considered the impact on greenhouse gas emissions of converting all rail operations to electric? Electrifying all of Aotearoa's existing rail network and twin tracking the main trunk line between Auckland and Wellington would appear to have a very positive long-term impact on greenhouse gas emissions.

We suggest that the Commission needs to be significantly more ambitious when it comes to long term change in farmland usage.

#### Commission Question Thirteen: An equitable, inclusive and well-planned climate transition

Agree

#### **Commission Question Fourteen: Transport**

As we have already said in our answer to Question 12 we believe that imports of fossil fuelled cars, buses and trucks should cease by 2028 rather than the 2035, or possibly 2030 dates the report recommends. The earlier banning of FF vehicles still leaves sufficient time, in our opinion, for the importers and distributors of vehicles to adjust. Vehicle distributors are already handling electric vehicles including hybrids without any major issues. One way to speed up the transition would be to impose a graduated tax on imports of FF vehicles from say 2024 through to 2028 starting at say 5% and raising to 25% in 2028 when imports would be banned.

A rapid and orderly transition to electric and hydrogen powered vehicles including trucks, buses and farm vehicles must be a key element of our climate crisis mitigation policies.

As far as the rail system is concerned, we have already commented in our answer to Question 12 that electrification of the rail system should be a high priority and we strongly recommend hat the Commission includes such action in its final recommendations to Government at the end of 2021.

Overall we support the actions outlined in the various Necessary Actions included in this section but urge the commission to go further.

#### Commission Question Fifteen: Heat, industry and power sectors

Whilst here is much that we support in the Heat, Industry and Power section of the Commission's report we are concerned that there is no mention of solar power as an energy source for domestic, commercial and industrial activities. The cost of solar cells has dropped dramatically over the last 5 years and is likely to become more and more economic as a source of electricity.

We suggest that changes be made to relevant legislation to require all new buildings from, say 2024, to include solar cells and suitable batteries to be included in all new residential, industrial, government and commercial buildings. At the same time changes to the way that the electricity generation and distribution industry allows for electricity generated by solar cells to be connected to the national grid will be necessary. To insure that the necessary changes can be made it could be necessary for the Government to seriously consider reversing the privatizing of the electricity supply industry. It would have been much simpler to move to a 100% renewable electricity generation situation under the NZ Electricity Department and local power boards arrangements.

#### **Commission Question 16: Agriculture**

This is potentially one of, if not, the most contentious climate change issue Aotearoa faces. The Commission's proposals appear to be the bare minimum, with little margin for error and the potential for significant continuing methane emissions beyond 2050. We believe that the time has come when serious consideration needs to be given to the overall mix of agricultural products Aotearoa produces and exports. Considerably more greenhouse gases are produced as a result of meat and dairy farming compared to cropping and horticulture. Increasingly the consumption of meat products, in particular, is being questioned worldwide. It would be good if the Climate Change Commission could initiate a constructive debate on this issue as soon as possible.

Emphasis is made, correctly in our view, of the impact of freshwater policies on agriculture. However, it should be remembered that the widespread conversion to dairying, particularly on the Canterbury Plains, was primarily the result of widespread irrigation in the late 1990s early 2000s. The farming industry demonstrated an ability to make rapid changes in farming methods, in this case from cropping to dairying, and we see no reason why the industry cannot make changes to reduce methane emissions in particular. The rapid increase in dairying during this time resulted in an more than doubling of cow numbers with the inevitable more than doubling of methane emissions.

#### **Commission Question 17: Forests**

We support the Commission's proposals for forests and particular support the planting of indigenous trees on both government owned conservation land and private land; if necessary some subsidies could be provided to private landlords who plant and manage indigenous forests.

#### **Commission Question 18: Waste**

We support the recommendations of the Commission as far as they go. We believe that much more could be done and in shorter time frames. We recommend that the Commission looks at strengthening this section.

#### **Commission Question 19: Multi-sector strategy**

There is a lot in this section, whilst we have not seen anything we would object to we do think it could be divided up into specific sections. With major changes to the Resource Management Act being signed by Government we would expect the Commission to not only monitor tye proposed changes but be involved in the process.

#### **Commission Question 20: Rules for measuring progress**

Yes

#### Commission Question 21: Reporting on and meeting the NDC

It would be helpful if, in using terms such as NDC, that the full wording be used when the term is first used for those unfamiliar with the term. As far as the recommendations of the Commission are concerned we do not believe that Aotearoa should depend on overseas emission credits to meet its National Determined Contribution (NDC) but we do agree with the Government reporting annually on how we are going to meeting the promises we have made as a country.

#### **Commission Question 22: Biogenic methane**

Whilst we do not disagree with the Commissions recommendations we question if they go far enough. Methane emissions have risen over the last 30 years faster than Carbon Dioxide as the national diary herd has over doubled in size.

#### **General Comments**

The report overall is a particularly useful document with much detail that will be invaluable as we, collectively, determine how we are going to do our part in keeping temperature rise to less than 1.5degrees. Our Government has shown, with the Covid 19 pandemic, that it is prepared to be guided by science. As we tackle the climate crisis following the science will be even more important.

## A Statement to the Government on the Nationally Determined Contribution (NDC) to the Paris Agreement for COP26 in Glasgow, Scotland in November 2021 from the Religious Leaders and Interfaith Groups of Aotearoa New Zealand

Humanity must right now confront the greatest moral and spiritual challenge in its history to date. As the recent United Nations IPCC Assessment Report, AR6, concludes, there is no hope of limiting global warming to even 2°C if we do not *commit to effective action now*. Already in our closest geographic region the disastrous consequences of a near 1.2°C rise in average global surface temperature are threatening the viability of more and more low-lying Pacific Island nations.

As people of faith seeking to respond to this challenge we draw comfort and insight from the rich traditions and teachings of the many religious communities now present in Aotearoa New Zealand. From each we see powerful invocations for all to care deeply for the natural world alongside caring for all of humanity. Many of the world's religions, including Judaism, Hinduism, Buddhism, Christianity, Islam, Sikhism and Baha'i have urged the need for environmental protection and conservation. Key to religious teaching is the understanding that sustainable and harmonious relationships between all of humanity and nature is not merely an abstract ideal but rather a comprehensive guide for living justly and gently upon the earth.

We are mindful also that our religious traditions have much in common with understandings central to Te Ao Māori. We acknowledge respectfully that through the teachings of traditional karakia the natural world is understood to be of sacred importance; that through the invocation of whakapapa comes the understanding that everything and everyone within Te Ao Whānui is interconnected and that through the shared responsibility of kaitiakitanga we accept that it is the duty of all humankind to care for the oceans and the earth and all who dwell therein.

Tragically, it is our collective failure to heed either these religious and indigenous teachings, or indeed to heed the warnings long given by climate change scientists, by environmental activists or by political figures deeply attuned to the perils of climate change which now results in an unmitigated global crisis.

At this time therefore we urge the Government to consider anew the benefit of incorporating the age-old teachings and values of religious and indigenous communities in your response to the Paris Agreement.

Religious and indigenous communities, who act collectively, who care for humankind and the environment, and who show compassion especially in times of crisis and distress, now have a significant role to play.

We recognise the enormity of the task, especially for rich and powerful countries whose models of extraction, production, consumption, and waste are causing the current environmental breakdown, including climate change, loss of biodiversity, rising sea levels, ocean acidification, water and air pollution, soil depletion, habitat destruction and mass extinction of many living organisms. We abhor the huge disparities in wealth, consumption and carbon emissions that continue to exist globally and in Aotearoa New Zealand.

Specifically we urge Government to engage the climate change kaupapa by:

- Committing to the strongest possible Nationally Determined Contribution (NDC) to the COP26 climate negotiations, in order to align the 2022 -2030 NDC with a 1.5°C limit to global temperature increase. To do this, our nation must aim to achieve at least a 50 per cent reduction in greenhouse gas emissions by 2030 and aim to achieve net zero emissions earlier than 2050.
- Committing to include experts from religious and indigenous communities to represent Aotearoa New Zealand at all international climate change forums. Respect for Te Tiriti o Waitangi mandates a requirement for equal Māori/non-Māori partnership relationships to be established in all aspects of representation and leadership associated with bodies established to work on these matters into the future.
- Actively advocating for those island nations of the Pacific already suffering from sea level rise and other hugely destructive direct climate change impacts.
- Ensuring a Just Transition by giving attention to measures such as: assessment of distributional inequities; policies to address unequal impacts and ensure income support; support of workers in high emissions sectors to retrain for roles in a zero-emissions economy.
- Supporting citizens disadvantaged by the climate crisis, through changes in government policies on tax, agriculture, energy and transport, and greatly increased investments in green and sustainable technology and practices.
- Ensuring that any use of purchased off-shore credits for mitigation is a "last resort" measure and is robustly verified for environmental integrity.
- Making the transition to a non-exploitative and green economy a top priority, the transition supported by science-based targets that are aligned with a healthy, resilient and zero-emissions future.
- Funding education on climate transitions on a par with public education for the management of the Covid-19 pandemic, providing a recalibrated system of education which will prepare young people and adults in a process of life-long learning for participation in a regenerative economy.
- Working with all those who are already actively educating people about climate change and climate action, including indigenous and faith communities.
- Taking a principled approach to responsibility for historic emissions. In achieving high standards of living, Aotearoa New Zealand has emitted more carbon per capita than most other countries. We therefore have a greater responsibility to reduce emissions as well as greater capacity to reduce emissions. This goes along with providing support for 'developing countries' to develop further through low emissions economies.

A Tiriti/Treaty of Waitangi Relationships Framework must guide the new NDC and all other aspects of response to the climate emergency. Te Ao Māori offers an integrated worldview which supports the whole-of-systems approach needed for a regenerative economy. Tangata Whenua-approved applications of tikanga will ensure that agreed standards provide the protection required for ngā taonga tuku iho, te whenua and te taiao (heritage, land and nature) This will have a positive impact on the restoration of ecological balance and on harm reduction levels in particular.

Faith communities are committed to putting energy into the task of restoring our relationships with the natural world in ways that work. Faced with the existential threat inherent in the climate crisis, we will draw on time-tested methods within our traditions, such as practices of renewal and behaviour change, renunciation, living simply and caring for each other, to guide us in undertaking this sacred work of restoration together, Tangata Whenua and Tangata Tiriti.

We urge the Government to find the moral and political courage that is required to engage this kaupapa fully on our behalf, both at home and at COP26 in Glasgow.

| Kia hora te marino             | May the seas be calm                 |
|--------------------------------|--------------------------------------|
| Kia whakapapa pounamu te Moana | May the shimmer of summer            |
| Kia tere te kārohirohi         | Glisten like the precious greenstone |
|                                | And dance gently across our pathways |

(as together we seek now to preserve and protect the most sacred gift of all, the gift of all of life on the earth.)

The Statement was prepared jointly by members of the Religious Diversity Centre together with a specially commissioned workgroup of persons well versed in matters of Climate Change.

The Religious Diversity Centre Trust co-chairs, Jocelyn Armstrong, Dr Jenny Te Paa Daniel, The Advisory Workgroup: The Ven. Amala Wrightson, Dr Paul Blaschke, Dr Mary Eastham, Dr Anwar Ghani, Dr Nicola Hoggard Creegan, Sunlou Liuvaie, Dr Betsan Martin, Dr Richard Milne, Rod Oram, Amy Ross, Mandira Shailaj, Dr Bob Skipp, Anton Spelman.

### Notes on Te Reo terms used in the statement

#### Kaupapa

A set of values or principles that form the basis for just action.

#### Tāngata Whenua and Tangata Tiriti

Tangata, or people of the whenua or land, are thus tangata whenua, the indigenous peoples of Aotearoa New Zealand. Tangata Tiriti are those later arrivals all of whom are mandated to be in Aotearoa New Zealand by virtue of the Treaty of Waitangi.

#### Te Ao Māori and Te Ao Whānui

Te Ao Maori, the Māori world view, based on the principle of whanaungatanga or the interconnectedness or interrelatedness of all within the living and spiritual realms. Te Ao Whānui, the wider world and all within it.

#### Tikanga

The correct way of doing things in accordance with Maori tradition.

#### Whakapapa and Kaitiakitanga

Whakapapa, genealogical relatedness. Kaitiakitanga, the responsibility for exercising a duty of care.

### Notes on technical terms used in the statement

#### In order of first appearance in the text.

#### Nationally Determined Contribution (NDC)

Each country that is party to the Paris Agreement (see below) must define its contribution to achieving the long-term temperature goal set out in the Paris Agreement. This contribution, and any targets that are part of it, is called the Nationally Determined Contribution.

#### **Paris Agreement**

The international treaty concluded in Paris in 2015, concerning efforts to address climate change after 2020. It was developed under the United Nations Framework Convention on Climate (1992).

#### **COP26** climate negotiations

The 26<sup>th</sup> yearly conference held within the framework of the United Nations Framework Convention on Climate Change. This conference will take place in Glasgow, Scotland in early November 2021.

#### **United Nations Sixth IPCC Assessment Report**

The most recent (August 2021) of a series of reports which assess scientific, technical, and socio-economic information concerning climate change, produced by the IPCC.

#### IPCC

The United Nations Intergovernmental Panel on Climate Change. The IPCC's work is widely agreed upon by both leading climate scientists and United Nations member states.

## Committing to the strongest possible Nationally Determined Contribution (NDC) to the COP26 climate negotiations

New Zealand's current NDC falls far short of the goals of the Paris Agreement. It would deliver only a moderate reduction in emissions which would be consistent with up to 3°C of global warming, according to analysis by Carbon Action Tracker <u>https://climateactiontracker.org/countries/new-zealand/</u>, which is run by a consortium of leading climate science institutions.

Instead, New Zealand's NDC should meet the challenge set by the Intergovernmental Panel on Climate Change's Special Report on 1.5 °C in 2019. It found that global carbon dioxide emissions would have to fall between 40 and 58 percent by 2030 from 2010 levels to have even a 50% to 66% chance of remaining within 1.5 degrees.

## Pacific nations already suffering from sea level rise and other hugely destructive direct climate change impacts

As well as rising sea levels threatening low-lying small islands, Pacific countries are experiencing other climate-related threats such as the increasing frequency and severity of cyclones and droughts, coral bleaching, ocean acidification, and freshwater sources becoming unusable through saltwater incursion. These impacts are all affecting the actual ability of people to continue living in their Pacific homelands, and therefore also causing the destruction of their way of life and cultural heritage.

#### **Just Transition**

An inclusive framework that uses a range of economic and social interventions needed to secure the rights of affected people such as workers and minority groups, when a region or economic sector is shifting to a sustainable future path in combating climate change.

#### Off-shore carbon credits for mitigation

An indirect way of New Zealand meeting emissions reduction targets is to purchase emissions units (arising from an emissions trading scheme) or emissions reductions and removals from overseas, rather than achieving them domestically. Such emission units or reductions are available on international markets but it is often difficult to trace whether they have been generated legally or ethically. Meeting emissions budgets this way also shifts the burden of reducing gross emissions onto future generations. Therefore, they should only be used as a last resort for meeting emissions budgets.

#### Non-exploitative, green and regenerative economy

A green economy is an economy that aims at reducing environmental risks and ecological scarcities, and that aims for sustainable development without degrading the environment. An economy that recognises ecological boundaries for all life and activities on our planet Earth. This economy must also be fair, aiming for social and environmental justice (see Just Transition).

In this economy, budgets must incentivise industry transitions without economic collapse. Relevant examples for different sectors in Aotearoa include replacing coal boilers with biomass boilers in food processing, expanding renewable energy supply and energy conservation, setting pathways for transport by putting an end to importation of internal combustion engine vehicles, ambitiously expanding the use of urban public transport, and incentivising cycling and walking. In our important agricultural sector, dairy and some meat production must be de-intensified. Regenerative agricultural principles must be incorporated into farming systems, in which ecological diversity (rather than monocultures) is welcomed, soil health is nurtured, and carbon drawn into the soil.

#### **Historic emissions**

The cumulative carbon emissions since the start of the industrial revolution have brought us to the climate crisis of today. International discussion on effort-sharing approaches between countries have often focused on the principle of individual countries taking responsibility for their historic emissions. This means that countries that have emitted more in the past need to make deeper and faster emissions reductions now.

#### Te Tiriti/Treaty of Waitangi Relationships Framework

A community leadership framework understood in terms of relationships between Tangata Whenua and Tangata Tiriti together, drawing on the worldview and values of both.

No government, even the most progressive, is yet prepared to contemplate the transformation we need: a global programme that places the survival of humanity and the rest of life on Earth above all other issues. We need not just new policy, but a new ethics. We need to close the gap between knowing and doing. But this conversation has scarcely begun.

-George Monbiot



#### SUBMISSION BY THE AUCKLAND BUSINESS FORUM ON TE HAU MĀROHI KI ANAMATA TRANSITIONING TO A LOW-EMISSIONS AND CLIMATE-RESILIENT FUTURE

| То:           | Ministry for the Environment<br>PO Box 10362<br>Wellington 6143 |
|---------------|---|
| Submitter:    | Auckland Business Forum   |
| Submitted by: | Barney Irvine (Auckland Business Forum Coordinator)             |

24 November 2021

#### Introduction

Date:

The Auckland Business Forum appreciates the opportunity to provide feedback on the transport section of *Te hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future*.

The Auckland Business Forum is a group of Auckland-based business organisations formed to advocate for greater urgency around the planning and delivery of the Auckland transport programme. The group was formed out of concern for a long-running decline in the standard of Auckland's transport infrastructure, and the subsequent impact on productivity and quality of life. The Auckland Business Forum's membership incorporates broad-based user and industry perspectives on transport issues, and consists of:

- Auckland Business Chamber
- Civil Contractors New Zealand
- Employers and Manufacturers Association (Northern)
- National Road Carriers Association
- The NZ Automobile Association (Auckland District Council)
- Ports of Auckland Ltd
- Vector Ltd

We support the intent of this consultation document, and the underpinning vision of a future that is "...low emission, climate resilient, and lifts the wellbeing of New Zealanders" (page 9). Consistent with the views of the majority of New Zealanders, Auckland Business Forum members and the stakeholders they represent recognise the need for urgent action to bring transport emissions down.

We do not believe, however, that the discussion document represents a realistic and effective road map for achieving this vision. In general, there is a concerning lack of rigour in a strategic and analytical sense, and a failure to balance aspirations with practical realities.

More importantly, we believe that the interventions it recommends should be more heavily geared towards the areas of greatest potential impact – namely, de-carbonisation of the vehicle fleet. We

submit that de-carbonisation of the fleet must be prioritised well in advance of initiatives aimed at mode shift, which are based on unrealistic goals and will deliver small (or even negative) impact on emissions targets.

This submission begins with several over-arching observations about the discussion document and the thinking behind it, before laying out the key elements of our views on the recommended approach, and identifying a number of specific issues and concerns with the proposed actions. Reflecting the priorities of our membership, the focus of this submission is heavily Auckland-oriented.

#### 1. General comments

#### i. Absence of detail

Throughout the discussion document, proposed initiatives are presented in high-level terms, with minimal context or justification. No detail is provided on costs and benefits, trade-offs and interdependencies or, critically, on how each of the initiatives will contribute to emissions targets. Where this information exists, it has to be sourced in related documents. Given the epoch-marking nature of the underlying issues, and of the changes that the public is being asked to make , we would expect to see a much stronger evidence base put forward, together with a higher degree of transparency.

#### ii. Pulling all policy levers

Likewise, there is no sense of prioritisation between the different initiatives that are proposed. Instead, the stated approach is to "pull all available policy levers" (page 13).

Action on transport emissions must be urgent, but it must also be targeted. Initiatives must focus on the areas that deliver greatest benefit, and take into account net impacts. Pulling at every available lever, without adequate discrimination, is a recipe for inefficient allocation of resources, unintended consequences, and interventions that end up doing more harm than good.

#### iii. Secondary objectives

Of further concern is the extent to which the proposed initiatives are being used as a pre-text to advance a range of secondary objectives that only tangentially relate to climate change – public health, social inclusivity, place-making, and so on. In turn, these secondary objectives are used to help justify the recommended actions. Though worthy causes in their own right, these issues should be advanced as part of a separate, focused discussion.

Further, if they were to be considered in the discussion document, it would need to be done via a robust methodology, rather than through 'cherry-picking'. As it stands, they have been put forward without any context, justification, or consideration of costs and trade-offs.

#### iv. Economic and social sustainability

In our view, the approach must incorporate a much stronger focus on economic and social sustainability, alongside the central focus on environmental sustainability. That is to say, a greater understanding that the Emissions Reduction Plan cannot succeed if the inevitable economic and social impacts are perceived by New Zealanders to be too great.

Whatever is proposed must be capable of winning public support now, and of maintaining that support well into the future. That includes being able to endure, for instance, periods of economic

downturn, where public hearts and minds are likely to focus much more strongly on economic and material concerns than environmental issues.

v. Transport is not low-hanging fruit

Comments in the introductory pages of the discussion document characterise the transport sector as 'low-hanging fruit' when it comes to emissions reduction:

"While all sectors will need to make concerted efforts to reduce emissions, there are likely to be more emissions reductions in the transport, energy and industry sectors in the first budget period. This is where the most efficient and cost-effective reductions can be made in a short period of time" (page 12).

We would strongly contest this. As illustrated in the remainder of this submission, achieving meaningful emissions reduction in transport will be extremely complex, costly, and uncertain. There are no easy answers or solutions, nor quick wins. The Government's expectations and aspirations in key areas of the programme will need to be re-calibrated.

#### 2. Key points

i. VKT target unfeasible

Nowhere is the discussion document is the magnitude of the change that New Zealanders are being asked to sign up to better illustrated than in the target for the reduction in vehicle travel, where the document calls for a 20% decrease in VKT by 2035.

This reduction would require transformation not just of the structure of the transport system, but throughout society and the wider economy. It would require systems and behaviours built up over the course of more than half a century to be halted and reconfigured in less than 15 years, and would return New Zealand to levels of per capita mobility not seen since the 1960s or earlier.

To put in perspective the scale of the reversal in trends that would be required: current MoT projections show a 20% *increase* in VKT by 2035.<sup>1</sup> The 20% decrease relative to current levels that the discussion document is targeting would therefore amount to a reduction of more than 30%, relative to where VKT would be in 2035 under a business as usual scenario.

We find it inexplicable that a target as bold and challenging as this, with such far-reaching implications, is not supported in the discussion document by robust data demonstrating how it will be reached. The discussion document merely notes that it will be achieved by "providing better travel options."

In fact, it is apparent from *Hikina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions Pathways to Net Zero by 2050* (the green paper that has guided much of the thinking in the discussion document) that the reduction in VKT will predominantly be achieved through pricing people off the network. *Hikina te Kohupara* introduces the concept of VKT pricing – a distance-based charge that would replace the current fuel tax/RUC regime, and that would be designed to incentivise mode shift.

<sup>&</sup>lt;sup>1</sup> https://www.transport.govt.nz/statistics-and-insights/transport-outlook/sheet/updated-future-state-model-results

Pathway 1 in *Hikina te Kohupara*, which we assume the 20% reduction target is based on, indicates that distance pricing will account for 14.2 percentage points of the total reduction.<sup>2</sup> Meanwhile, congestion pricing will account for 2.6 percentage points, parking pricing 1.5 percentage points, and land use and public transport (PT) 3.9 percentage points.<sup>3</sup>

No detail is provided, however, on the scale of charging that is envisaged. Without such detail, we have no option but to speculate, but it stands to reason that a quantum far greater than any actual or potential charges New Zealanders have faced through fuel tax/RUC or parking, or within the discussion around congestion charging in Auckland.

As we see it, the inevitable outcome would be a charging regime that placed an unreasonable and unrealistic burden on road users (particularly those who have no realistic alternatives), severed vital social and economic connections and opportunities, and had a crippling impact on the economy. This would represent too high a price to pay for emissions reduction objectives, and we would see no prospect of it being able to secure the degree of social licence that would be required.

ii. Limited scope for mode shift

Nor do we believe that heavy investment PT, walking and cycling infrastructure can be relied upon to generate a fundamental change in transport behaviour (as noted above, together with land use changes, PT is intended to account for four percentage points of the 20% VKT reduction).

To illustrate, mode shift has been at the heart of Auckland Transport's strategy for managing the growth in demand on the Auckland network for several years now, the idea being to absorb the bulk of Auckland's population growth on public transport, walking and cycling. But, even with billions of dollars directed towards PT and active modes under the strategy over the next decade, the change in transport behaviour will only be marginal. As Figure 1 shows, a faster rate of PT growth means little when the absolute numbers are so small (in relative terms).





We do not see anything in the suite of PT interventions proposed in the discussion document that would produce a significantly different outcome – the transport landscape will continue to be

<sup>&</sup>lt;sup>2</sup> Hikina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions Pathways to Net Zero by 2050, p 150. <sup>3</sup> The different VKT reductions have been added multiplicatively, hence the sum is greater than the total VKT change.

heavily dominated by private vehicles. New households and new businesses entering Auckland and other New Zealand cities over the coming decade and a half will have diverse travel needs, and will continue to rely predominantly on the flexibility and efficiency of private vehicles to meet those needs. There is no question of the validity of, and urgent need for, an increased role for PT, but the scope of that role (and the contribution it can make to reducing emissions) must be seen with the appropriate degree of context.

iii. Increased congestion

Consequently, we would argue that plans to scale up the reallocation of road space to bus and cycle lanes in an effort to encourage mode shift – as put forward in Focus area 1 – need to be managed very carefully. Further reducing general traffic lane capacity in growing cities where cars and trucks account for the vast bulk of travel can only lead to one outcome: increased congestion.

This is bad news for quality of life and for productivity, and it is also bad news for emissions. Put simply, cars and trucks that spend more time stuck in traffic, and that are forced to stop and start more frequently, will consume more fuel, and therefore generate more emissions. As illustrated in Figure 2, emissions are close to 60% higher for vehicles travelling at 30km/h than for vehicles travelling at 70km/h.





Source: Waka Kotahi

Furthermore, in the case of Auckland, Census data points to an increasing trend of population loss to smaller centres (Whangarei and Tauranga, in particular) – and Auckland's congestion levels are certain to be a significant push factor. As a greater number of Aucklanders opt to relocate, VKT nationally will increase (as VKT per capita is typically higher outside the main cities) and that means increased emissions.

The link between congestion and emissions is not acknowledged in the discussion document, and needs to be brought to the centre of the Government's approach.

#### iv. De-carbonisation of the fleet

Based on the above, our firm view is that the Government's approach should be centred on decarbonising the vehicle fleet, and that this should be prioritised well ahead of efforts to advance mode shift.

De-carbonisation of the vehicle fleet is where there is greatest opportunity to achieve an impact, and to deliver on the discussion document's targets for emissions reductions. Increasing EVs to 30% of the national fleet and reducing emissions from freight by 25% by 2035, as per Focus areas 2 and 3, will be extremely difficult, but our sense is that meaningful progress can be made towards both goals.

With that in mind, we would prioritise the following initiatives (a number of which are incorporated in Focus areas 2 and 3 of the discussion document):

- Large-scale production and distribution of bio-fuels second-generation bio-fuels and synthetic fuels will play a critical role in reducing the emissions of the existing fleet, particularly during the initial years of the programme, while New Zealand waits for global EV supply constraints to be overcome. Revenue from the ETS levy on mineral fuel should be directed towards scaling up biofuels production and distribution
- Introduction of Euro 6 standards for heavy vehicles this represents the most effective single step the Government could take to reduce heavy vehicle emissions. By our estimation, a minimum improvement in fuel efficiency of 6-8% is feasible, regardless of the freight application
- Development of EV infrastructure again, while we wait for the availability of EVs to increase globally, the work must be done to install EV charging facilities (for both light vehicles and heavy vehicles) across the country
- Electricity network EVs will spur a massive increase in electricity demand and, to prepare for this, urgent steps must be taken to increase generation and distribution capacity in the national electricity system. Changes to the planning regime may well be required to enable the required infrastructure to be delivered in time
- **Tax incentives** we support further exploration of opportunities to adjust the tax regime to incentivise the uptake of EVs

#### Other observations

i. Road expansion

Consistent with our comments above about the link between congestion and emissions, we would challenge any effort to justify a blanket cut-back to road construction on the basis of emissions, as is signalled on page 69 of the discussion document. Any increases in VKT (and subsequent increases in emissions) that follow the addition of road capacity would likely be offset by de-congestion benefits – this must be factored in to the consideration of whether or not new road projects support emissions objectives.

We note that demand for road space is generated first and foremost by population growth – it is not a *response* to new road space being made available. With the Auckland population expected to grow by around 300,000 people through to the middle of next decade<sup>4</sup> – and with the bulk of those

<sup>&</sup>lt;sup>4</sup> https://www.stats.govt.nz/news/auckland-population-may-hit-2-million-in-early-2030s

people relying on private vehicles to get around – ongoing investment in the road network will be vital.

#### ii. Congestion pricing

As a long-standing supporter of congestion pricing, the Auckland Business Forum is pleased to see it given prominence in the discussion document. We stress, however, that our support for congestion pricing is predicated on improved network performance being the primary objective, with environmental benefits (or any other benefits, for that matter) being an added bonus. Any change to that balance as a result of environmental objectives being incorporated would jeopardise our support and, we believe, would clash with public understanding of the rationale for congestion charging (which, in turn, would set back the congestion pricing discussion).

#### iii. Streamlining public consultation

We are not comfortable with the suggestion, outlined on page 67, of regulatory reforms designed to streamline public consultation requirements and make it easier for road controlling authorities to change the road environment in order to promote PT and active modes. The Auckland experience of such changes – which is ample – has been characterised by clumsy community engagement, substandard infrastructure outcomes, and widespread public alienation and frustration.

Streamlining consultation processes will only exacerbate the problems Auckland Transport and other RCAs face in implementing these projects, and will ultimately result in longer – not shorter – delivery timeframes. If RCAs hope to speed up delivery, the focus should go on finding ways to have a much more genuine, more meaningful conversation with the public, rather than trying to bypass that conversation altogether.

iv. Freight mode shift

As with mode shift from general traffic to PT, we are sceptical about the scope for mode shift from trucks to rail and coastal shipping to play a significant role in reducing freight emissions. Part of the problem is that so much of the freight task – particularly intra-regional freight – is uncontestable. Once goods are delivered to the railyard or port, there is no role for rail or shipping to play.

Increases in mode share are possible (for rail in particular), but these would only be modest, and would entail massive capital spending.

Meanwhile, we note that there is no sign of any slowdown in the growth in demand for road freight, both intra- and inter-regional. Population growth, the pervasiveness of Just in Time inventory, and the increasing dominance of on-line retail (which has surged during the pandemic) will ensure high levels of demand.

#### v. Changes to RUC

As the composition of the vehicle fleet evolves, we recognise that changes may be required to RUC to ensure the system is fit for purpose. We would stress, however, that such changes must not undermine the fundamental purpose of RUC, which is to minimise the damage that heavy vehicles do to our roads. The impact that any potential changes will have on vehicle design and, subsequently, on the condition of the road network, must be well understood, and we would insist that officials engage closely with the freight industry to develop a workable approach.

#### vi. Vehicle scrappage scheme

We note that previous trials of vehicle scrappage schemes in Auckland, Wellington and Christchurch did not suggest that the benefits would justify the costs. That is to say, the cost of incentivising drivers of older vehicles to bring forward scrappage would not be justified by the savings in terms of emissions. We are interested to know why the Ministry of Transport's position has now changed, and what information has been brought to light that would suggest that the scheme could now be delivered more efficiently.

#### Concluding remarks

Again, we appreciate the opportunity to provide feedback. Many of the issues we have raised speak to the scale of the challenge the Government will face in turning this discussion document into an Emissions Reduction Plan that can succeed, not just environmentally, but socially and economically as well.

Close collaboration with industry is essential and, to that end, Auckland Business Forum members would welcome the opportunity to share their broad-based transport expertise in a regular, ongoing way. We would appreciate the chance to discuss this, and the contents of this submission, with transport officials at the earliest convenience.

Yours sincerely,

**Michael Barnett** 

**Chair, Auckland Business Forum** 

Auckland Business Forum



24 November 2021

Ministry for the Environment By email: <u>mitigation@mfe.govt.nz</u>

## Auckland Council's submission on Te hau mārohi ki anamata – Transitioning to a low-emissions and climate resilient future

Thank you for providing Auckland Council with the opportunity to submit on Te hau mārohi ki anamata – Transitioning to a low-emissions and climate resilient future. The Auckland Council group submission is attached. The Group submission incorporates feedback from the Auckland Council and its CCO's Watercare, Auckland Transport, and Auckland Unlimited. It also includes feedback from the Independent Māori Statutory Board.

Local Board submissions on the discussion document are appended to the Council's submission.

Please contact Adam Morris, Principal Strategic Advisor, Auckland Plan Strategy and Research Department depart

Ngā mihi,



Cr Richard Hills Environment and Climate Change Committee Chairperson



Cr Pippa Coom

Environment and Climate Change Committee Deputy Chairperson Member Tau Henare

Independent Māori Statutory Board Member





## Submission to the Ministry for the Environment

Te hau mārohi ki anamata – Transitioning to a lowemissions and climate resilient future 24 November 2021





aucklandcouncil.govt.nz

## Mihimihi

Ka mihi ake ai ki ngā maunga here kōrero, ki ngā pari whakarongo tai, ki ngā awa tuku kiri o ōna manawhenua, ōna mana ā-iwi taketake mai, tauiwi atu. Tāmaki – makau a te rau, murau a te tini, wenerau a te mano. Kāhore tō rite i te ao.

*I greet the mountains, repository of all that has been said of this place,* 

there I greet the cliffs that have heard the ebb and flow of the tides of time,

and the rivers that cleansed the forebears of all who came those born of this land

and the newcomers among us all.

Auckland – beloved of hundreds, famed among the multitude, envy of thousands. You are unique in the world.

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## **Executive summary**

Auckland Council **supports the overall intent** of Te hau mārohi ki anamata – Transitioning to a lowemissions and climate resilient future that sets out proposals to support achievement of the first national emissions budget for Aotearoa.

The first national emissions budget has broadly been accepted by the Government which has agreed in principle to recognise changes in projected forestry emissions that were not available when the Climate Change Commission prepared its advice in May 2021.

Auckland Council acknowledges that there are significant government reforms underway in other sectors and that the country is still responding to the COVID-19 pandemic. However, the climate emergency poses the biggest challenge to Aotearoa and is reflective of the 'era scale' change which our planet and society are entering where we will likely face a near to long-term future of climatic and environmental disruption.

We recognise that the proposals set out in this discussion document and the proposed emissions budgets are a positive step towards reducing emissions, but we reiterate our feedback to the Climate Change Commission that **more ambitious budgets and actions** are needed to align with Aotearoa delivering on its commitment to the Paris Agreement. This means including steeper reduction targets and, where appropriate, bringing forward deadlines for meeting those targets. As with many other countries, our short-term goals are insufficient to meet that agreement<sup>1</sup>.

Government therefore **must prioritise** climate mitigation and climate adaptation actions, and these actions must be aligned with, and sufficient to achieve, the steeper reduction targets that are needed. This must also enable local government, communities, businesses, and individuals to do the same.

Auckland Council has set its own strategic direction in emissions reductions through Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan. We therefore have significant interest in the national emissions reduction plan (ERP).

We have a growing and significant climate change programme that has informed our responses on various earlier climate related government consultations.

In responding to this discussion document, we have drawn on those previous submissions and content where possible. We recommend that in developing the final emissions reduction plan those documents are referred to for further information and examples of climate mitigation and adaptation work.

We have focused our response on those areas where we think we can provide value to the development of the emissions reduction plan or where proposed polices or targets have a bearing on our climate work. Those focus areas are - Transition pathways, Funding and finance, Making an equitable transition, Planning, Behaviour change, Transport, Energy and industry, Building and construction, and Waste.

Auckland's Climate Plan: Te Tāruke-ā-Tāwhiri sets out a high-level pathway to a 50 per cent reduction in overall emissions by 2030. Transport is expected to make a disproportionate contribution 64 per cent and Auckland Council and Auckland Transport are currently developing a Transport Emissions Reduction Plan (TERP) to chart a pathway to this reduction. We believe the alignment of actions at

<sup>&</sup>lt;sup>1</sup> <u>https://climateactiontracker.org/publications/glasgows-2030-credibility-gap-net-zeros-lip-service-to-climate-action/</u>

central government and local government level is critical to meeting both Auckland's and New Zealand's goals.

We reiterate, **the targets set are insufficient to keep global warming to 1.5 degrees and they are insufficient to avoid a climate disaster**. Actions at a local level can only go so far without sufficient and strong direction, policy and action at a national level. Once that is in place, much more is achievable at a local level.

We highlight six overarching key issues from our submission.

### Implementation and delivery of the emissions budgets

Auckland Council recognises that the purpose of this consultation is to seek views on additional proposals to address gaps in existing policies and actions to meet the first emissions budget. However, it is of concern that there are no clear mechanisms given on how the proposals will be delivered and that there will be no further opportunity to provide feedback on the final emissions reduction plan. The ERP will likely have a significant impact on Auckland Council's function, funding, and ability to deliver on its own climate goals. Local authorities, communities and businesses need clear direction on what will be expected of them, how they will be enabled to take greater action and when actions will be put in place.

In general, we believe that significant funding will need to be made available to local authorities to support them both with the task of reducing emissions and adapting to the impacts of climate change. Similarly, businesses and individuals will also need a wide range of support.

The required rapid decrease of emissions and the cost of adaptation will have a significant financial impact on local government. We are responsible for maintaining many crucial assets, such as our roads, coastal and water infrastructure, that are already being impacted by climate change and will be worse affected in the future. There will also be increasing costs required to increase the resilience of our local communities and natural ecosystems.

Whilst funding is needed for capital investment it will also be needed for upskilling, education, information, and awareness raising campaigns to influence behaviours necessary for transition and systemic change.

### **Equitable transition**

In our feedback to this consultation, we reiterate the importance of implementing Te Tāruke-ā-Tāwhiri to the climate response not only for Tāmaki Makaurau Auckland but for Aotearoa. Ensuring that Tāmaki Makaurau undergoes a rapid, fair, and equitable transition to a low-emissions, regenerative and climate resilient economy is critical to the economic resilience of Aotearoa as a whole.

Critical to this will be taking a whole of living systems and intergenerational approach to transition which means equity and fairness need to be considered from the perspective of nature, place, and people – both for current and future generations.

### Legislative requirements

Local authorities need to be able to prioritise actions which will enable delivery of the emissions budgets and any subsequent climate related policies, for example, the National Adaptation Plan which will be developed in 2022.

There has to be strong legal weighting for the proposed targets and actions to be prioritised in planning decisions that seek low-emissions outcomes. This means that Resource Management reforms must include legislative links to the Climate Response (Zero Carbon Amendment) Act.

### Aligning systems and tools

Responding to the climate emergency is complex, involving many different and interconnecting challenges that are starting to impact all sectors of society, the environment, our communities, and consequently central government and local government functions.

Many policy levers with the greatest potential to cut emissions, including those accelerating the transition to a low-emissions vehicle fleet and land transport pricing and funding reform, are controlled largely by central government.

This means alignment in government policy direction is essential. For example, misalignment in government policy direction that enables out of sequence and unplanned growth challenges Auckland's quality compact urban form approach and contributes to a more fragmented development pattern with the associated infrastructure implications. It potentially also redirects funding away from more climate positive development.

Alignment is also important between climate mitigation and climate adaptation policies and actions. The two are often supportive of one another, but mitigation actions can be seen as the most urgent of our climate action responses and climate adaptation seen as a future issue and as such, are treated separately. Considering both mitigation and adaptation together means that the definition of success for climate goals are not solely based on emissions targets but encompass broader outcomes.

Finally, there is an opportunity to ensure there is alignment across all significant government reforms and policy updates currently underway (e.g., Resource Management, National Policy Statement on Urban Development, and Three Waters).

The scale of the challenge is such that Government must use every lever at its disposal. Although this submission does not provide specific feedback on the Emissions Trading Scheme section, this a key lever for Government. ETS settings must be geared to adequately price carbon to meet the desired budgets.

### lwi/Māori

Auckland Council has an overarching responsibility enshrined in the Local Government Act to be cognisant of the Treaty of Waitangi and its principles and has a commitment to a Treaty-based partnership with Māori. In practice, these commitments are delivered through working together to achieve better outcomes for Māori, lifting economic, social, environmental and cultural wellbeing.

Broadly, there are five thematic areas that describe council's partnership obligations to Māori under various legislation:

- Treaty principles (have regard to, take into account, or give effect to)
- Māori participation in decision-making processes
- recognition of Māori cultural values and perspectives
- contributing to Māori capacity
- enabling and promoting Māori well-being.

It is integral that in meeting the emissions budget, Government does not disadvantage Māori and adequately resources Māori to mitigate the impacts of emissions budgets. This includes enabling flexibility for Māori to decide how funds are spent.

Auckland Council supports the proposal that Government and iwi/Māori partner to create a strategy that responds to the particular experiences and needs of Māori and the Māori economy. This strategy should support Māori to take climate action, reduce emissions and prepare for a future in Aotearoa that will be both low-emission and climate impacted.

Although the proposal is that this strategy is separate from the Equitable Transition Strategy, we highlight that it is essential that in meeting the emissions budget, central government does not disadvantage Māori and that it adequately resources Māori to mitigate the impacts of emissions budgets.

It is important to ensure partnership with iwi/Māori is deliberate in developing the proposed strategy and also the emissions reduction plan. In our response to the Climate Change Commission's draft guidance, we recommended that central government engages with local government and iwi/Māori to guide engagement and shape the forms and forums that will best articulate and allow for partnership between Māori and central/local government. This will require engagement with Māori at governance, technical support and administrative levels.

We also recommended the creation of a Māori Advisory Group to guide and inform the work of central government in its development of the emissions reduction plan to ensure a Te Ao Māori worldview is embedded in the work of central government.

### Futures (foresight) approach

Meeting the emissions budgets and our regional and national climate goals will require fundamental changes to our society where everything will need to be done differently – where we live, how and where work happens, how people travel, how food is supplied, and how learning happens. This leaves us with high levels of uncertainty about the future.

A futures or foresight approach is recommended in developing not only the final emissions plan but also any future related policy developments, for example, the National Adaptation Plan. Futures approaches help to design robust plans, strategies, and policies, recognising there is a range of possible futures that can be shaped by the decisions we make today.

An example of where this would be required is exploring where climate mitigation or adaptation actions may not be sustainable in the long-term under future climate scenarios. How, for example, might future scenarios and impacts such as flooding and drought impact the actions being identified. Clear mapping of the scenarios is crucial to ensure we do not lock in actions that will not be fit for purpose in the future.

## Introduction

### Era scale change

We are entering a period of unprecedented 'era scale' change.

The climate emergency and biodiversity crises mean that we likely face a near to long-term future of climatic and environmental disruption. In addition, we see continuous disruption posed by rapid social, political, cultural, and technological changes.

These changes leave high levels of uncertainty for government, local government, communities, business, and individuals. Persisting with a business-as-usual approach to how we live, work, and play in the midst of these evolving challenges means that future shocks will eventually exceed our capacity to respond.

There is broad global recognition that we need to significantly rethink our economic system, with a transition to a zero-carbon and sustainable economy. This calls for a greater focus on the way we live and work within our planetary boundaries.

Auckland Council as a local authority has a role to support our communities through this transition, as does central government, with businesses, research institutes and individuals playing key roles.

### **Climate action in Auckland**

Auckland Council endorsed Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan in July 2020. The plan sets targets of reducing the region's greenhouse gas (GHG) emissions by 50 per cent by 2030 (against a 2016 baseline) and transitioning to net zero emissions by 2050, whilst ensuring the region is resilient to the impacts of climate change. Auckland Council also declared a Climate Emergency in 2019, highlighting the urgency required to transition Tāmaki Makaurau towards a net zero emissions future. As a member of the C40 Cities Climate Leadership Group (C40) since 2015, Auckland Council has endorsed several key declarations including the Deadline 2020 commitment, the Race to Zero and the Global Green New Deal.

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan outlines a decarbonisation pathway for Tāmaki Makaurau that takes into consideration the particular nature and challenges of the region's greenhouse gas (GHG) emissions profile, a profile that is predominantly comprised of transport emissions (43.4 per cent), stationary energy (26.7%) and industrial processes and product use (21.3 per cent). Unlike the national emissions profile for Aotearoa, only a relatively small proportion of GHG emissions in Tāmaki Makaurau Auckland comes from agriculture (5.6 per cent, see Figure 1).



Figure 1: Auckland's Greenhouse Gas emissions profile 2018

The modelled decarbonisation pathway set out in Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan shows emissions holding steady from 2016 to 2020 and then decreasing rapidly. However, provisional data considered after the modelling was completed suggested that annual emissions may have increased above the values modelled for 2017 – 2019 (see Figure 2). This has since been confirmed with the release of the Auckland's Greenhouse Gas Inventory to 2018<sup>2</sup>.

As a result, a steeper decarbonisation pathway than that modelled is required to achieve a 50 per cent reduction in GHG emissions by 2030. Delivering this decarbonisation pathway will require transformative and committed action across sectors and by a range of diverse stakeholders including Auckland Council, central government, businesses and individuals.

Between 2009 and 2018, gross emissions in Tāmaki Makaurau increased by 588 kt CO<sub>2</sub>e or 5.4 per cent, but net emissions decreased by 105 kt CO<sub>2</sub>e or 1.0 per cent due to more carbon sequestration from forestry. Emissions have decreased from the energy sector, but increased from other sources (transport, waste, industrial process and product use and agriculture).

The targets and decarbonisation pathway for Tāmaki Makaurau detailed in Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan have been endorsed by C40 as compliant with the 1.5°C ambitions of the Paris Agreement.

As Auckland requires transformative action from central government to deliver on its regional commitments, so too will the successful realisation of Aotearoa's emission reduction commitments require strong climate action from Tāmaki Makaurau. Auckland represents 14.5 per cent of the national greenhouse gas profile and 26.3 per cent of the national long-lived gas profile. Furthermore, in the transport arena, where the Climate Change Commission's draft guidance to government identified that

<sup>&</sup>lt;sup>2</sup> <u>https://knowledgeauckland.org.nz/publications/aucklands-greenhouse-gas-inventory-to-2018/</u>

significant action is required in the immediate term, Auckland's transport emissions represent 6.3 per cent of the national greenhouse gas profile and 14.3 per cent of the national long-lived gas profile.

The critical importance of successfully implementing Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan to the climate response of Aotearoa is further underscored by the fact that Auckland represents 37.6 per cent of the national gross domestic product (year ended March 2019). Ensuring that Auckland undergoes a rapid, fair and equitable transition to a low-emissions, regenerative and climate resilient economy will therefore be critical to the economic resilience of Aotearoa as a whole.

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan identifies eight priority action areas for the transition to a low-emission, regenerative and climate resilient future. These include a focus on many of the key action areas set out within this discussion document, including Transport, the Built Environment, Food, Energy and Industry.



**Figure 2:** Auckland's historical annual emissions, business as usual projection and modelled decarbonisation pathway (emissions data from 2017 and 2018 is now available and shown as black dots)

The table below lists climate related government consultation responses and climate related documents which we recommend referring to for further detail of Auckland Council positions and/or direction on climate action.

**Table 1:** Previous submissions made by Auckland Council and documents which provide further detail on our climate related positions and strategic direction.

| Report  | Description   |
|---|---|
| Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan  | This is Auckland's long-term approach to climate action. It<br>sets out the priority action areas to deliver our goals to<br>reduce emissions and adapt to the impacts of climate<br>change.              |
| Long term plan (10-year budget and recovery budget)   | This is Auckland's 10-year budget (2021-2031) and is our<br>recovery budget, in which we are investing an additional<br>\$152 million on a package of climate initiatives                                 |
| He Pou a Rangi – the Climate Change Commission's draft<br>advice to Government (2021)   | Response to government consultation   |
| Hīkina te Kohupara – Kia mauri ora ai te iwi: Transport<br>Emissions: Pathways to Net Zero by 2050 – Ministry of<br>Transport Discussion Document (2021). | Response to government consultation   |
| Building for Climate Change: Transforming Operational<br>Efficiency and Reducing whole-of-life embodied carbon<br>(2020)                                  | Response to government consultation   |
| Accelerating renewable energy and energy efficiency (2020)  | Response to government consultation   |
| Climate Change Response (Emissions Trading Reform)<br>Amendment Bill (2019)   | Response to government consultation   |
| Auckland Economy Climate Risk Assessment (2020)   | An assessment of the risks and opportunities arising from<br>both physical climate change risks and risks arising from the<br>transition to a low carbon economy. This informed our<br>COVID-19 response. |

### Tāmaki Makaurau Auckland context

Auckland Council is a unitary authority and the largest local government agency in New Zealand. Its unique governance structure includes: a governing body focusing on region-wide strategic and regulatory directions; 21 local boards making decisions on local issues and representing Auckland's diverse communities; and an Independent Māori Statutory Board, which has a statutory responsibility to promote Issues of Significance to Māori (mana whenua and mataawaka) in Auckland and to monitor Auckland Council's performance in responding effectively to these. Auckland Council also works in partnership with mana whenua entities, who represent the interests, mātauranga and tikanga of mana whenua of Tāmaki Makaurau.

Auckland is home to one-third of Aotearoa New Zealand's population, with over 1.7 million people. Over the next 30 years, this could increase by another 720,000 people, potentially requiring another 313,000 dwellings and 263,000 jobs. The rate and speed of Auckland's population growth puts pressure on our communities, our environment, and our housing and infrastructure networks, including roads. It also means increasing demand for space, infrastructure, and services necessary to support this level of growth.

The Auckland Plan 2050 recognises these pressures in identifying that to achieve the Tāmaki Makaurau we want, we must address the three most important challenges of high population growth, ensuring prosperity is shared amongst all Aucklanders, and reversing environmental degradation.

## **Discussion document questions**

## Meeting the net-zero challenge: Transition pathway

## 1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out the correct ones?

The five principles proposed in the discussion document are:

- A fair, equitable and inclusive transition
- An evidence-based approach
- Environmental and social benefits beyond emissions reductions
- Upholding Te Tiriti o Waitangi
- A clear, ambitious, and affordable path

Auckland Council agrees that the emissions reduction plan should be guided by a set of principles and recommends one change to the principles and one addition.

The principle "environmental and social benefits beyond emissions reductions" reads more like an outcome than a principle and could be replaced with "improving nature and its supporting systems". This is to better reflect the urgent need for nature-based solutions to be at the forefront of decision-making.

We recommend including an additional principle about engaging and educating the public. Engaged communities and societies play a significant role in helping or hindering massive societal shifts on complex issues (as has been seen with the COVID-19 pandemic). Ensuring we bring the public along on the journey is essential. An Ipsos Global Advisor Survey<sup>3</sup> (Ipsos survey) of 31 countries found that New Zealanders have one of the lowest rates of belief that individuals should take action now to combat climate change – we scored lower than 26 other countries on this measure.

We also support the principle of using an evidence-based approach that includes consumption emissions. Consumption emissions are important because they help people understand what choices they make in their personal lives have the greatest positive climate impact and the relative importance of categories of activity e.g., dietary choices have a more significant impact under a consumption emissions approach. Auckland Council is developing a consumption emissions table for use locally and nationally. In the future an application programme interface (API) will also be developed so other agencies or businesses can use consistent data.

The Ipsos survey highlighted there can be a tendency to overestimate the value of low-impact changes (such as recycling and saving water), and underestimate high-impact ones, such as changing diets to less meat or dairy, or changing travel to reduce car use and flights. Stats NZ are now undertaking a regular (annual/quarterly) national consumption emissions inventory. We would support further work on this and ideally more granularity on the inventory to enable the data to be more accessible for a wider range of organisations, as well as splitting the data regionally to assist with understanding of trends and progress.

<sup>&</sup>lt;sup>3</sup><u>https://www.ipsos.com/sites/default/files/ct/news/documents/202109/Climate%20change\_Ipsos%20New%20Zealand%2006.</u> 09.21.pdf

# 2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

Approximately 80 per cent of Tāmaki Makaurau Auckland's economy is made up of small and medium-sized enterprises (SMEs) and it is imperative they are provided guidance through either central or local government and local economic development organisations and provided with enough opportunities to adapt.

We cannot solely depend on smaller businesses to make the low-emissions decisions if they are not supported through policy options or incentives. This support will require extensive engagement with small business communities to understand the barriers and challenges and how they are likely to respond to different policies and incentives. Existing climate change business tools (e.g., Sustainable Business Network's climate tool) are a good first step but still require support and training for application into businesses and at scale.

There are some significant cost barriers for businesses in transitioning to more sustainable practices. For example, Auckland's industry typically utilises reticulated natural gas. There are significant cost barriers to converting industrial process heat away from natural gas. Some industries in Auckland that use high temperature process heat do not currently have a feasible alternative. Support for these industries is required to transition from natural gas, particularly for manufacturing at risk of emissions leakage.

Sector transition plans are required to identify clear roadmaps and specific transition actions for different sectors. Auckland Unlimited, a CCO of Auckland Council that promotes economic growth, have undertaken similar work for the visitor economy for Auckland and nationally for the screen sector, both of which include sector carbon footprint calculations. Ongoing investment will be required for other sectors which require transition plans and carbon footprints e.g., the construction and food and beverage sectors.

There are differences in levels of understanding of risk and impact from climate change between different sectors, evident from industry engagement undertaken as part of the Economy Climate Change Risk Assessment for Auckland (ECCRA)<sup>4</sup>, which looked at both physical risks and transitions risks from climate change.

Cost is not the only barrier and opportunity. Urban form is an important influencer of reducing emissions requiring an integrated approach to urban and transport planning and promoting improved mix of land uses to reduce the need to travel.

## 3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

Local government has an important role to play in reducing emissions at a local level. Its scope of influence extends beyond urban and transport planning, to many services that engage communities. Auckland Council supports having a strong national direction for local government, which would recognise our role in reducing emissions and support local government authorities to prioritise and target their emissions reductions' efforts to achieve our national goals. For example, in Tāmaki

<sup>&</sup>lt;sup>4</sup> <u>https://www.knowledgeauckland.org.nz/media/2045/auckland-economy-climate-change-risk-assessment-aecom-ateed-august-2020.pdf</u>

Makaurau our focus and goals for reducing transport emissions will likely need to be higher than in other rural local authorities, where such reductions may be more difficult to achieve.

Local governments need to be enabled to support alternative, resilient energy options for their communities. It is necessary to consider the current barriers to enabling more independent and distributed energy generation and then address how these can be overcome. From an adaptation perspective, diversifying energy sources will support climate change resilience.

The Government should provide guidance and tools to enable healthy, sustainable food choices. Consumption emissions from food makes up approximately 25 per cent of their emissions, second only to transport, and much of this is due to red meat and dairy<sup>5</sup>. More New Zealanders are saying they are likely to eat more plant-based choices in the year ahead, however, there are systems that could be influenced to increase the speed of changes. Recent research conducted by the consultancy Price Waterhouse Coopers (PwC) indicates if plant-based choices are more prominent in supermarkets, or food is labelled with sustainable messages, consumers are significantly more likely to purchase those (up 34 per cent for supermarket choice architecture and up 11 per cent for labelling). A consideration for Government is creating policy that public sector food services have a higher proportion of plant-based food choices for main meals in places such as hospitals, schools, corrections, etc. This could show leadership and carry over to private sector<sup>6</sup>.

## 4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

Implementing nature-based solutions in planning is a key priority area in Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan.

It is recommended that a broader definition of nature-based solutions is adopted in line with Te Mana o te Taioa – Aotearoa New Zealand Biodiversity Strategy and New Zealand Infrastructure Strategy. There needs to be strong legal weighting for nature-based solutions in our planning decisions. This will require the Resource Management reforms to include legislative links to the Climate Change Response (Zero Carbon Amendment) Act.

Key drivers of the reforms are the inability of the current system to respond quickly to urban development pressures, the need to respond to climate change and poor environmental outcomes, particularly freshwater quality and diminishing biodiversity. It is important to note that many policy updates are responding to urban development pressures and should not be focused solely on supply of capacity.

The resource management system reforms present an important opportunity to ensure resource management system aligns with the aims of the Emissions Reduction Plan and delivery of the national Emissions Budgets. Council is supportive of outcomes which would reduce greenhouse gas emissions, including by way of low-emission urban form, and increase the removal of greenhouse gases from the atmosphere. One practical way this could be achieved is through enabling and simplifying promotion and protection of urban trees more than is currently allowed for. Council acknowledges that this would need to be balanced with other aims of this system, but this could be achieved by setting appropriate parameters for plan making either through national direction in the

<sup>&</sup>lt;sup>5</sup> <u>https://www.stats.govt.nz/information-releases/greenhouse-gas-emissions-consumption-based-year-ended-2017</u>

<sup>&</sup>lt;sup>6</sup> <u>https://www.knowledgeauckland.org.nz/publications/sustainable-healthy-food-choices-research-and-development-project-primary-research-summary-report/</u>

National Planning Framework or directly through provisions in the Natural and Built Environment Act. These parameters could specify which urban trees could be subject to rules, objectives, or policies in plans based on species and level of maturity.

Government should also consider a wetland restoration strategy for Aotearoa New Zealand to achieve a specific amount of carbon capture and to provide coastal wetland areas to buffer the land from sea level rise. Wetland habitats have some of the highest carbon sequestration on land. Peat is another ecosystem that stores large amounts of carbon.

#### 5. Are there any other views you wish to share in relation to the Transition Pathway?

With regards to economy, it is important to note that Auckland's economical structure varies from the rest of Aotearoa, for example manufacturing is a significant component of Auckland's economy whereas it is not nationally, and so may require different needs for transition.

There needs to be better clarity on what is meant by a "low-emissions sector" as often it is not the sector that is the issue, but how the business is run. Agriculture can be positive or negative. Construction is generally high emitting, but living buildings are regenerative. Throw-away fashion is a problem; buying quality or second-hand pieces is positive, reducing waste. Domestic tourism is sustainable in a way international tourism might not be. The focus should be on all industries and companies becoming carbon positive and obliged to set pathways to meeting zero-carbon goals that incorporates halving emissions by 2030.

In terms of accountability, directors and senior leaders need to take responsibility for climate action and decarbonisation within their own businesses and organisations, as is required with other issues such as health and safety. Support and training on climate related issues would help develop the capacity of directors and senior leadership to do this.

## 6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

Adaptation can often be thought of as a future issue, but without action now we risk far greater financial and human cost into the future. There can often be synergies between climate mitigation and adaptation measures.

Through Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan, Auckland Council has developed an illustrative decarbonisation pathway to model climate action across the sectors in Auckland's GHG emissions profile.

Implementation actions to enable that pathway will either reduce GHG emissions (mitigation), or address climate risks (adaptation), or deliver on both. A table of climate actions which both reduce greenhouse gas emissions (mitigation), and address climate risks (adaptation) can be found in Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan<sup>7</sup>. They cut across natural environment, built environment, transport, economy, communities and coast, food, energy and industry, and cross-cutting actions.

Although some of these actions will be Auckland specific, they will help with considering the type of activities which can deliver on climate mitigation and adaptation outcomes.

<sup>&</sup>lt;sup>7</sup> <u>https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/environmental-plans-strategies/aucklands-climate-plan/Pages/default.aspx</u>
The consultation document states, "a site that may face certain climate hazards (for example, wind, storms, drought, flooding, wildfire) may require a different building design and materials". While this is supported, it should also recognise that development is not always possible in areas prone to natural hazards. A stronger stance on avoidance is required, with particular regard to managing private property rights, or alternatively linking this with the Climate Adaptation Act. It is also noted that land instability, erosion and coastal inundation are not included in the examples of natural hazards.

It is recommended that the risks also address challenges regarding embodied carbon in the transport, building and construction sector.

# 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

Intensification occurring in the wrong place, or at the wrong time is a key risk to actions to reduce emissions. Government is directing significant intensification in Tier 1 and 2 councils. While intensification is supported, this direction can inevitably increase growth in areas without the necessary public transport infrastructure, further exacerbating transport emissions.

More broadly however, there needs to be consideration given to where actions may not be sustainable in the long-term under future climate scenarios. In the discussion document it is not clear how future scenarios and impacts such as flooding and drought will impact the actions being identified. Clear mapping of the scenarios is crucial to ensure that we do not lock in actions that will not be fit for purpose in the future.

#### Meeting the net-zero challenge: Working with our Tiriti partners

#### Note that the response below covers Questions 8 to 12.

Through this consultation, the Ministry for the Environment is seeking direct input from iwi/Māori on a range of areas including the relevance of national plans and strategies and input into their development, what Māori-led transition might look like, what is of greatest importance for iwi/Māori in emissions profiles, and what partnership models that have resulted in good outcomes for Māori.

Council cannot speak on behalf of iwi/Māori but offers some input here on the basis of engagement on council's climate change programme more generally. Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan is an example of a climate action framework that aims to centre Te Ao Māori in its recommendations and delivery approach.

In relation to possible mechanisms to advance partnering objectives, council makes two additional points for your reference:

- 1. There is ongoing work to formalise the inclusion of the Tāmaki Makaurau Mana Whenua Forum into the governance structure of the Auckland Transport Alignment Project, where key strategic transport investment decisions are made.
- 2. In our response to the Climate Change Commission's draft guidance, council recommended the creation of a Māori Advisory Group to guide and inform the work of central government in its development of the emissions reduction plan to ensure a Te Ao Māori worldview is embedded in the work of central government.

We also draw your attention to our key points in the Executive Summary.

#### Meeting the net-zero challenge: Making an equitable transition

#### Note that the response below covers Questions 13 to 15.

We re-iterate our submission to the Climate Change Commission's draft guidance around the critical importance of successfully implementing Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan to the climate response of Aotearoa, underscored by the fact that Tāmaki Makaurau represents 37.6 per cent of the national gross domestic product (year ended March 2019). Ensuring Tāmaki Makaurau undergoes a rapid, fair and equitable transition to a low-emissions, regenerative and climate resilient economy will therefore be critical to the economic resilience of Aotearoa as a whole.

There are many different areas of equity that need to be considered in the context of climate change:

- socio-economic differences and people's ability to adapt
- where people live
- the access people have to services and workplaces
- differences in people's jobs (e.g., whether the job is indoors or outdoors)
- differences in accessibility needs.

Climate change also creates intergenerational inequity. If we do not act, we risk leaving a significantly different and less habitable world for future generations.

We agree with the proposed objectives for an Equitable Transitions Strategy. Cross-government and cross sector engagement and collaboration from the outset will be crucial for a successful and effective strategy. Ensuring there is clear direction on how the objectives can and should be delivered and assessed against the actions will be crucial along with effective monitoring to demonstrate they are being achieved.

It is integral that in meeting the emissions budgets, central government does not disadvantage Māori and adequately resources Māori to mitigate the impacts of emissions budgets. This includes enabling flexibility for Māori to decide how funds are spent.

The objectives speak to partnering with iwi/Māori, however, we recommend consideration of how Te Ao Māori perspective can be brought into the objectives overall, for example, considering equity and fairness from the perspective of nature, place and people. Recognising the rights and interests of nature, place and people from a whole living systems perspective is critical.

Ultimately, all scales of government and society must contribute to intergenerational equity and the delivery of 'ka noho teina te tangata', led by rangatahi Māori, as the tool that develops our understanding and knowledge of climate action and resilience, shifts us into innovation and supports us to move in the right direction as quickly as possible.

In addition to what is already included in the discussion document, consideration should be given for decarbonisation interventions more broadly and whether there will be equitable access to those to help reduce risks for firms and households, promoting opportunities, and supporting workers, households, and communities through transitions. Interventions would include low-emissions transport and renewable energy devices. The Ministry of Transport recently commissioned a report on transport equity in Tāmaki Makaurau Auckland<sup>8</sup>. The report found that low income is the most consistent factor affecting people's ability to afford transport to meet their needs, but income and community demographics are rarely considered when transport investment is prioritised. These issues may be further exacerbated by potential legislative and regulatory responses to climate change, for example, transitioning to low-emission vehicles.

We strongly advocate for co-developed localised transitions plans for identifying transitional actions and risks, which will be essential in ensuring an equitable transition for Auckland's communities and businesses, particularly to protect deprived, marginalised, and isolated communities from the greatest impacts and from unintended consequences of transition. Auckland Council does not currently have the resources to develop a localised transition plan and will need support from central government to do so.

# 16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

Auckland Council recommends consideration of the National Home/Domestic Dwelling "Warrant of Fitness" certification or similar that enforces minimum heating requirements, for example, home energy certifications<sup>9</sup> such as those used in the UK. This will deliver better health outcomes as well as carbon reductions.

From a just transition perspective, it is also important to work with mid-high-income households to ensure they are meeting their fair share of emissions reductions so that low-income earners are not having to disproportionately reduce theirs. Those on higher incomes tend to have higher carbon emissions<sup>10</sup>.

Government should also consider food subsidies for healthy, plant-based food options to make it more affordable and easier to access plant-based (low-carbon) foods. Auckland Council commissioned a recent pilot that found there are several levers that could be used to affect sustainable food choices including choice architecture which is the design of different ways in which choices can be presented to consumers, and the impact of that presentation on consumer decision-making. The pilot study found that integrating plant-based food choices and animal-based products within a purchasing journey could lead to an increase in plant-based choices<sup>11</sup>.

# 17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

The economic structure of Auckland is different to the rest of Aotearoa and as such we require specific support in responding to climate related regulatory changes, particularly in transport, manufacturing, and housing.

Auckland Unlimited are currently undertaking work to understand the cost of climate change on the region, which can be achieved using a dynamic recursive Computable General Equilibrium (CGE)

<sup>&</sup>lt;sup>8</sup> <u>https://www.transport.govt.nz/area-of-interest/auckland/equity-in-aucklands-transport-system/</u>

<sup>&</sup>lt;sup>9</sup> <u>https://www.gov.uk/buy-sell-your-home/energy-performance-certificates</u>

<sup>&</sup>lt;sup>10</sup> <u>http://motu-www.motu.org.nz/wpapers/14\_05.pdf</u>

<sup>&</sup>lt;sup>11</sup> <u>https://www.knowledgeauckland.org.nz/publications/sustainable-healthy-food-choices-research-and-development-project-primary-research-summary-report/</u>

model that can show the overall impacts of changes in policy and the industries that are likely to be impacted.

The Climate Change Commission has provided high level CGE modelling results for New Zealand but not at a regional level. As part of Auckland Council and their role in regional economic development, Auckland Unlimited are seeking to use these data to better understand the impacts of climate mitigation and adaptation in Auckland, including identifying 'green' jobs and jobs which will be disproportionately affected because of transitioning to a low carbon economy. Results are expected in March 2022 however it is clear we will need free or subsidised training programmes for enterprises and workers to re-skill or re-deploy into sustainable businesses or industries.

#### 20. Is there anything else you wish to share in relation to making an equitable transition?

The discussion document identifies the need to reform the vocational education system to ensure it is better able to support the skills that learners, employers, and the community will require. It is also important to consider how high school leavers will be provided with skills to be able to participate within a quality, low-emissions employment market in the future.

# Aligning systems and tools: Government accountability and coordination

## 21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

Auckland Council agrees that responding to climate change requires a coordinated work programme across central government and local government, communities and the private sector. Therefore, the scope should not be limited to agencies or departments which have specific responsibilities or functions relating to climate change. Implementing actions will require an all of government approach.

In our submission to the Climate Change Commission's draft guidance, we supported nominating specific Ministers and agencies with accountability for implementing policies and strategies in line with emissions budgets.

We support the proposed measure that agencies and Ministers must be accountable for what the emissions reduction plan sets out. This is in addition to the existing Climate Change Ministerial Group and Climate Change Chief Executives Board which set strategic direction and drives a climate work programme. Our response to the Climate Change Commission also strongly recommended that responsibilities are not passed on to local authorities without adequate funding – Ministers should be tasked with clearly identifying resourcing and funding mechanisms.

To ensure accountability, Auckland Council urges that principles or objectives are accompanied by a monitoring and evaluation framework with specific and measurable targets.

# 23. Is there anything else you wish to share in relation to government accountability and coordination?

There are several central government policies and directions which are conflicting and may have implications for our ability to reduce emissions. For example, the National Policy Statement on urban Development (2020) enables out-of-sequence plan changes. Although the Resource

Management reforms and National Planning Framework will help to address these conflicts, it remains a notable concern in relation to government accountability and coordination.

#### Aligning systems and tools: Funding and finance

#### 26. What else should the Government prioritise in directing public and private finance into lowemissions investment and activity?

As stated in question 6, there can often be synergies between climate mitigation and adaptation. We believe that significant funding will need to be made available to local authorities to support them both with the task of reducing their emissions and adapting to the impacts of climate change. Without action now we risk far greater financial and human cost into the future.

Policy interventions should be prioritised to deliver systemic change. In this regard, we support the focus of behavioural and societal shifts to delivering the net zero emissions target and how policy can support these changes. There are opportunities where policies could help drive shifts in behaviour, resulting in greater emissions reductions. We recommend that Government should establish policy outcomes and funding mechanisms for behaviour change programmes to educate and embed a cultural transition to low carbon.

Funding for mode shift interventions needs to significantly increase with a substantial overhaul of our delivery processes to enable us to do more, faster, and to satisfy the targets proposed by the Commission for mode shift and reductions in vehicle kilometres travelled (VKT). Auckland Transport and Auckland Council are prioritising mode shift in our investment in land transport, through partnership with the Government. However, our ability to ramp this up further is limited by current funding constraints.

Investment needs to be considered through a climate lens. Bringing climate change into decisionmaking will be essential, not only to prioritise low-emissions investments, but also to de-prioritise high emissions investments or investments which lock us into a pathway that does not support emissions reduction or adaptation measures.

Some specific areas where provision of funding and/or removing financial barriers are needed is delivering high energy efficient homes (Home Star 6 or above); increasing open space/green infrastructure in existing urban areas and providing incentives to encourage the private sector to build quality compact mixed-use developments.

There may be a need for the Government to subsidise low carbon and climate resilient industries.

#### 27. Is there anything else you wish to share in relation to funding and financing?

One funding mechanism that has been effective at supporting local authorities to make change is the Waste Minimisation Fund. This provides a combination of a contestable fund, which is open to applications from local government and also businesses and the community for innovative solutions to reduce waste and provides some bulk funding that is distributed to councils based on their population. The fund requires councils to use the money for projects that are additional to their business-as-usual waste management activities. Because councils are required to develop a Waste Management and Minimisation Plan and provide an annual audited report on how they use the funds from the waste levy, there is strong accountability for ensuring the funds are used correctly. In our experience, this model has enabled Auckland Council to undertake waste minimisation initiatives that we could not have otherwise progressed.

This is an example of one funding mechanism that has worked well and could be used, or adapted, to other areas. Regardless of the mechanism, we believe that local authorities would require additional funding to adequately respond to achieve the desired emissions budgets.

Investments is another area where Government could make some considerations. For example, Kiwisaver is New Zealand's primary source of private savings for retirement. There could be strong climate-based rules around how Kiwisaver providers invest money on an individual's behalf. This is particularly true for default providers. One option would be to only allow a scheme to become a default provider if it meets certain climate-based criteria. Another option is to reward the most climate friendly schemes in a given year with a greater share of the default provider opt-ins by individuals in the following year.

#### Aligning systems and tools: Planning

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

We reiterate the Commission's comments in their discussion document that local government plays an important role in facilitating the transition to a thriving, climate resilient and low-emissions Aotearoa. Councils make decisions on land use, urban form, road and transport services, provision of housing and the three waters, waste management, flood risk management and coastal management. These decisions affect how New Zealanders live, work and run businesses.

Local and central government working in partnership is essential for meeting the emissions budgets as is having clear alignment between strategy, policy, regulations and non-regulatory tools at central and local government levels. This will enable local government to make effective decisions for climate change mitigation and adaptation.

In the short term, this includes ensuring alignment across the plans, strategies, and directions of key primary and secondary legislation (Climate Change Response (Zero Carbon) Amendment Act, Local Government Act, Waste Minimisation Act, Building Act and Code, national direction under the Resource Management Act including the wider Essential Freshwater package, the proposed RM(Enabling Housing Supply and other matters) Amendment Bill, Land Transport Management Act, and New Zealand Infrastructure Commission/Te Waihanga Act).

In the longer term, this requires the new resource management system carrying over this alignment, but also playing a greater role in delivering integration. A clear role for the Regional Spatial Strategies and ambitious and clear national direction, provided through the National Planning Framework, is an essential element in achieving this. There is a need to invest in capacity and capability across local and central government staff to support the planning system to appropriately address emissions reductions in the ways proposed.

To enable the emissions reduction plans to be implemented effectively, Government needs to identify funding mechanisms (other than rate increases) that enable local government to deliver on central government directions.

## 34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

There is a lack of alignment and consistency in policy documents such as the National Policy Statement on Urban Development 2020 (NPS UD), aspects of which conflict with the Climate Change Commission's advice. Although climate change is both an objective and policy of the NPS UD, these aims may conflict with other aspects of the NPS UD such as requiring councils to allow for development moving 'out' as well as 'up'. The NPS UD requires local authorities to be 'responsive' to private plan changes for development in locations, or at times, not previously anticipated. This impacts the council's ability to plan for future growth, align land use and infrastructure funding and provision, and achieve a quality compact urban form. In Auckland most of such private plan changes are for new greenfield development.

Misalignment in government policy direction and enablement of out of sequence and unplanned growth challenges Auckland's quality compact urban form approach and contributes to Auckland's development pattern becoming more fragmented with the associated infrastructure implications (uncertainty, higher holding cots, greater risk of underutilised assets etc.). It potentially also redirects funding away from more climate positive development.

We recommend giving statutory weight to strategies and plans which seek to achieve low-emission outcomes for urban and transport planning. This could include limiting the scope of out of sequence plan changes, limiting greenfield growth unless it contributes to lowering emissions (e.g., reducing reliance on private cars) and avoiding development on unsuitable land.

#### Aligning systems and tools: Research, science and innovation

Investment in local carbon sinks is an important opportunity to reduce greenhouse gas emissions. Mechanisms, such as targets to off-set locally (as opposed to investing in overseas markets) will encourage sequestration opportunities in areas within Aotearoa that need it the most.

This means looking beyond forestry as the only focus for carbon sinks. There is global recognition that coastal blue carbon ecosystems such as mangrove forests, seagrass and salt marshes are among the most efficient natural carbon sinks. In addition, studies have shown that shellfish and seaweed farming remove significant tonnes of CO<sub>2</sub> from the atmosphere.

These ecosystems provide several co-benefits such as supporting biodiversity, enhancing water quality, coastal protection, as well as influencing social outcomes for communities living on low-lying coastal land which will be impacted by sea level rise.

The opportunity for local rather than international offsetting, which would also help these ecosystems thrive and build resilience to the impacts of climate change, requires more research and support from central Government, for example by:

- ensuring the protection of marine ecosystems from industry pollution, farming, seabed dredging, bottom trawling and coastal development to enable blue ecosystems to be regenerated and designated as carbon sinks
- establishing specific, legally binding targets to protect and restore blue carbon environments within New Zealand's Nationally Determined Contributions (NDC) implementation plan
- providing seed-funding and support for blue carbon restoration projects and

promoting initiatives to encourage the private sector to invest in coastal restoration schemes; and

• supporting the development of a methodology to allow for blue carbon credits to enter the carbon-offset markets (under the Emissions Trading Scheme or voluntary schemes).

These measures, alongside government-set targets for local off-setting would create an economy for carbon reduction, creating jobs in the areas which are most vulnerable to the worst impacts of climate change.

Auckland Council has commenced work to map potential blue carbon eco-systems within its region and has initiated engagement with mana whenua groups about the opportunities to partner together on sequestration projects. This work requires government support for research and sharing of knowledge at a national level and support for councils to undertake initiatives within their communities to achieve local outcomes.

Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan includes supporting research to understand and quantify the carbon sequestration potential of all of Auckland's ecosystem types to contribute to both climate mitigation and adaptation. Very little research has been undertaken in New Zealand in this field and funds for such research are urgently required.

#### Aligning systems and tools: Behaviour change

# 42. What information, tools or forums would encourage you to take greater action on climate change?

Government needs to take a leadership role in developing a COVID-style Climate Action campaign to illustrate Government is leading and co-ordinating sector responses to reduce New Zealand's emissions. This is important to shift national attitudes and values towards the urgency of the climate crisis. It will also build social licence for the large, systemic changes that we need to make as a country including regulatory changes introduced by Government. However, there is also an important role for specific behavioural interventions to shape individual behaviours.

Love Food Hate Waste is a good example of how behaviour change programmes can be implemented both nationally and locally. The programme is led by a national coordinator and implemented locally by local authorities that can tailor engagements and either scale up or down depending on their local communities.

Local government can partner with central government and communities to deliver practical, face to face interventions to change behaviours. For example, supporting individuals to walk, cycle or use public transport, reduce waste, choose plant-based foods more often or save energy. The Auckland Council group has experience delivering successful behavioural interventions, for example, to reduce water usage during droughts, support transport mode shift and reduce power usage through free home energy advice. Over 45,000 New Zealanders have used Auckland Council's Future Fit carbon footprint tool to calculate their carbon footprint and learn how to reduce it.

Local government also has a valuable role to play in engaging communities and local champions to deliver climate action – for example, in Auckland, we have funded successful interventions such as Bike Hubs (to increase confidence and access to bikes for those more vulnerable), and Econeighbourhoods, which bring communities together in small groups to take sustainability actions. Over two million dollars will be invested by Auckland Council this year in community climate, waste minimisation and sustainability initiatives which will reach roughly 65,000 Aucklanders and 310 schools. We are also investing in new programmes to support rangatahi Māori and marae to deliver Māori-led climate projects and become more resilient to climate impacts.

# 43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

There are three sources of information that could be considered to understand the need and benefits of reducing emissions:

- Messenger effect (behavioural insight) people are more likely to relate to people that they know and trust. Local government has insights on local communities and how best to engage them to take climate action and can help identify local champions i.e., people from their own community.
- Trusted advocates (e.g., sports personalities) can help create social norms about the types of behaviours we want to encourage. This creates positive social norms which can lead to widespread behaviour change.
- Online communities such as Auckland Council's LiveLightly.nz website can give communities access to information that is easy to understand.

Auckland Council's waste activities include a three-pronged approach to engaging with the community consisting of:

- WasteWise Advisors: a team of staff delivering waste minimisation engagement events canvassing directly to householders at home
- Structured behaviour change programmes: e.g., Waste Free Parenting, Compost Collective, Zero Waste Events, Love Food Hate Waste
- Community-Led development: contracts with 25 targeted community partners and organisations to deliver to particular communities e.g., Māori, Chinese, Indian, Pasifika communities.

#### 44. Are there other views you wish to share in relation to behaviour change?

The Government's Emissions Reduction Plan needs to include education as an action and we strongly advocate for youth to be involved at the national level in all parts of the climate change conversation. Children and their communities are already taking a wide range of climate-positive actions that could be upscaled with further investment and support from the Ministry of Education and other agencies.

We recommend greater investment by the Ministry of Education and other agencies in three key areas:

- Invest in programmes and school infrastructure that enable young people to become active participants in taking action to reduce emissions in their local communities.
- Prioritise education for sustainability (EfS) and professional development for teachers in the New Zealand Curriculum. In addition, the upcoming refresh of the Environmental Education for Sustainability Strategy and Action Plan should be done with a broader EfS focus to address cultural, social, economic, and environmental sustainability. Currently there is a focus on conservation.

• Create and implement an ongoing strategy to embed youth voice into the Emissions Reduction Plan and wider climate change conversation, and to ensure the youth voice is considered and incorporated into ERP decisions at a governance level.

Our recommendations are based on our own work with schools and youth who have shown a strong appetite for sustainability to be embedded within education and for greater participation of youth in decision-making.

With regard to broader funding, the national Waste Minimisation Fund is an effective model for how to administer a fund. The fund could be allocated across three areas:

- local government (based on the population of local authorities) to deliver localised and community led initiatives to reduce emissions
- central government to run large scale awareness style campaigns and programmes
- communities to apply for grants to run nationally significant projects. Specific funding should be ring-fenced for Māori-led climate initiatives.

We need to engage communities to catalyse a movement and create the political mandate to enact the policies and decisions that need to be made. Face-to-face community engagement and behavioural tools are best delivered by communities themselves, supported and enabled by local government.

Education and information are not the only levers to promote behaviour change, there are several other levers that can be used as interventions. Awareness raising campaigns are important but will only get us part of the way there. Most people are aware of the challenge of climate change and that they need to change their behaviour, however other barriers often stand in their way. Auckland Council has developed a behavioural insights toolkit which summarises some of the key principles when developing behaviour change programmes<sup>12</sup>. We are applying this to our regional and local climate change initiatives where possible.

#### Aligning systems and tools: Moving to a circular economy

# 45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

Te Tāruke-ā-Tāwhiri supports a move to a low carbon economy which is a resilient, regenerative and distributive economy, underpinned by the ethic of kaitiakitanga, and ensures that natural resources are extracted at a rate that they can be replenished. A low carbon and regenerative economy is also one of the guiding principles for our Economic Development Action Plan, which sets out Auckland Council group's role in recovery from the COVID-19 pandemic.

Circular economic principles are critical to achieving New Zealand's emissions goals. Equally, other societal principles such as intergenerational justice, equity and inclusivity, are also critical to an economy that supports people, the environment and the systems that connect us. Many of these principles are also fundamental to the concept of zero waste and linked to the principles of the 'waste hierarchy' (reduce, reuse, recycle, recover).

<sup>&</sup>lt;sup>12</sup> https://knowledgeauckland.org.nz/media/1889/behavioural-insights-toolkit-rimu-auckland-council-june-2020.pdf

# 47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?

A circular economy has three core principles which the proposed strategy would need to be developed around, alongside principles representing our Te Tiriti o Waitangi partnership:

- Design out waste and pollution: View waste as a design flaw. Loss of materials and energy through the production process is minimised.
- Keep products and materials in use: Think in systems. Products are designed to be reused, repaired, and recycled, and waste materials for one process become an input for another.
- Regenerate natural systems: Shift perspectives from minimising environmental harm to doing good. Valuable nutrients are returned to the soil and ecosystems are enhanced.

All three principles listed above relate directly to the concept of zero waste, and we therefore recommend a reference to zero waste is included in the proposed circular economy strategy. We recommend that any new national circular economy strategy needs to be across government departments and ministries and be closely aligned with the proposed new waste strategy for Aotearoa New Zealand.

We recommend the waste hierarchy can be applied as a useful assessment tool to guide how biobased materials can best contribute to an overall system that seeks to reduce GHG emissions, while also contributing to climate change resilience and circular economies. The different uses of biobased materials in the economy need to be considered against the principles of the waste hierarchy. For example, the benefits certain biomass brings when returned to the soil, with respect to water retention, soil health, plant growth, along with contributing to carbon sinks, warrant a higher position on the waste hierarchy compared to the burning of biomass for energy again. Likewise, by retaining timber building materials within supply chains for recycling or upcycling purposes can also create associated co-benefits (job creation, skill development).

To transition to a circular economic system will mean applying the three principles listed above to existing policy instruments which can range from regulation to fiscal measures, such as tax, planning tools, and legislation. Many of those existing tools will have been developed based on assumptions of a linear economic system. Consideration needs to be given as to whether applying circular principles to existing tools will reinforce the existing system and issues or genuinely take us to a circular economy. We recommend taking a futures thinking (foresight) approach<sup>13</sup> to developing a strategy. To get consensus on issues, priorities and pathways forward that approach will need to be collaborative and participatory between government, local government, iwi/Māori, private sector and communities.

# 48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

We support the range of proposals put forward. Further work is required regarding how the proposals can be funded and resourced. We recommend progressing work on the waste strategy as a priority given it is a fundamental part of any circular economy.

<sup>&</sup>lt;sup>13</sup> <u>https://dpmc.govt.nz/our-programmes/policy-project/policy-methods-toolbox/futures-thinking</u>

# 49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

Seven areas need to be addressed to enable a circular economy<sup>14</sup>.

- 1. Think and operate in systems: No one organisation has the power to shift a system, let alone an economy.
- 2. Reset procurement: Evolution of procurement criteria to enable circular solutions to compete including a focus on whole life costs rather than initial purchase costs.
- 3. Make the circularity desirable: Stimulating a demand for more circular solutions to be implemented. Leveraging marketing and influencing opportunities to highlight the benefits of circular solutions.
- 4. Fund the transition: Linear solutions are the norm and the status quo, therefore there is a need for strategic funding of circular solutions to level the playing field.
- 5. Share knowledge and develop skills: As the circular economy is a new concept and many are not aware of its role or potential, there is a need for knowledge transfer and skills development.
- 6. Use data: Understanding material flows, where value is lost and where waste is created will quantitatively highlight the potential benefits. Improving business understanding of what they are losing will stimulate demand and in turn investment in circular solutions.
- 7. Set policy to enable transition: Use national policy levers to accelerate the move towards a more circular economy. These can range from regulation to fiscal measures, such as tax reliefs and the like at a local government level, and innovative procurement solutions.

Consideration should also be given to social procurement to enable marginalised groups to break down systemic bias in mainstream systems and therefore be able to fully participate in a sustainable economy.

Council is providing separate feedback to the Ministry for the Environment on a proposed new Waste Strategy for Aotearoa New Zealand. In that submission, we provide support for an ambitious waste strategy that has a vision for a circular economy. However, this requires legislative change. Of particular interest to council is how the responsibility for minimising waste can be spread more equitably to include those who produce waste and those in the private sector who manage it, alongside local authorities. One of the most powerful ways to achieve this is via mandatory, regulated product stewardship schemes. For further information, on council's views on a zero waste, circular economy, please refer to council's separate submission on the proposed waste strategy.

In addition to the seven areas listed above, we strongly recommend including mandatory product stewardship and businesses taking responsibility.

#### 50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

Auckland Council agrees that the proposed Government circular economy strategy would need to link to Aotearoa's proposed new Waste Strategy and the outcomes of the Waste Minimisation Act 2008 review. There are strong links between the circular economy and waste, but as this is a system

<sup>&</sup>lt;sup>14</sup> <u>https://www.aucklandnz.com/sites/build\_auckland/files/media-library/documents/ATEED-economic-insight-paper-Circular-economy-final.pdf</u>

wide issue and opportunity, we recommend that a review of relevant links to other cross government legislation be made and brought together in the proposed strategy.

# 51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

Council is providing separate feedback on the proposed new Waste Strategy and associated legislation in a separate submission to the Ministry for the Environment. It is recommended that it is referred to alongside this submission.

#### **Transitioning key sectors: Transport**

Significantly reducing transport emissions will require unprecedented levels of investment in public and active transport supported by radical and far-reaching policy and institutional reform. While more detailed work is clearly needed, Auckland Council welcomes the suite of proposals and commitments set out in the discussion document.

As stated in the executive summary, for Tāmaki Makaurau to meet its 2030 regional emissions reduction target, transport is expected to reduce emissions 64 per cent by 2030 (based on 2016 emissions). This is significantly more ambitious than national targets. As the discussion document explains, more significant reductions are expected from the largest cities. Auckland meeting its 64 per cent reduction target for transport would propel Aotearoa towards its national targets, taking the pressure off other regions less able to decarbonise.

To put this in context, if Aucklanders continued to move around the region in 2030 as they did today, meeting the 2030 target would mean they could only travel that way two and a half days a week – the other days of the week must be by walking, cycling or zero-emission public transport - or not making the trip in the first place. Meeting this target requires **transformational change and new tools**; incremental change and existing tools will simply not meet either Auckland or New Zealand's targets.

Auckland Council and Auckland Transport are currently developing a Transport Emissions Reduction Plan (TERP) to chart a pathway to this modelled 64 per cent reduction. It will identify the nature and scale of the transformation and tools needed to influence Aucklanders and businesses to move around the city in a way that meets Auckland's transport emissions targets. We have not yet identified all the tools needed but discuss some in the questions below. Although the targets in the discussion document of a 13 per cent reduction in transport emissions by 2030 and a 41 per cent reduction by 2035 fall short of those the TERP aspires to, the kinds of interventions required to get to both are very similar. This ongoing alignment of proposed actions at central and local government level is critical, we are therefore very keen to work closely with government agencies in 2022 as the TERP and the ERP are finalised.

Auckland needs the Government's support with these enablers; in return, Auckland would propel Aotearoa towards its national targets.

The TERP is expected to be finalised the second quarter of 2022.

# 52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

While the decarbonisation of the vehicle fleet has an important part to play, it is insufficient to meet our shared transport emissions reduction goals, particularly in the short to medium term given likely global constraints in the availability of electric vehicles. Nor will reliance on fleet decarbonisation address other key challenges facing the sector such as inequity of accessibility and transport choice, safety, congestion, street level amenity, and availability of road space for walking and cycling.

We therefore strongly support the government's view that VKT reduction through mode shift is critical to reducing transport emissions and improving other transport outcomes and we welcome the establishment of a VKT reduction target.

We do not have a view on the appropriateness of the 20 per cent target for New Zealand as a whole. However, a higher target is needed to meet Auckland's targets, while the feasibility and affordability of the 20 per cent reduction also needs to be addressed. As it stands, a 20 per cent reduction in VKT equates to a reduction of roughly 3.2 billion VKT in Auckland by 2035 (based on total VKT, including freight). We do note, however, that Auckland is likely to be required to deliver VKT reduction over and above this figure, given the ambitious pathway of the TERP and the fact that, as the country's largest urban area, Auckland will need to disproportionately contribute to national VKT targets.

Meeting this VKT shift entirely with better travel options from public transport, PKT (passenger kilometres travelled) needs to grow from 1 to 4.2 billion in 14 years – an annual growth rate of 11 per cent. However, the growth rate in the last decade has been less than 5 per cent pa. Meeting the VKT shift entirely with better travel options from cycling, CKT (cycling kilometres travelled) grows from 0.3 to 3.5 billion in 14 years – an annual growth rate of 19 per cent, well beyond what Auckland has ever seen.

A VKT reduction would come from a combination of better travel options from both public transport and active modes. Prior to the COVID-19 pandemic, Auckland saw a rapid increase in public transport patronage over a decade or more (more than 100 million boardings in 2019 compared to 59 million in 2009). However, the scale of mode shift required dwarfs the successes of the past decade, particularly given that travel by private and commercial vehicles also increased substantially over the same period (primarily due to population growth and longer average trip lengths).

Irrespective of the precise mix of VKT shift, the growth rates required of PKT and CKT would be unprecedented and neither feasible nor affordable under current settings. These settings must be radically transformed to substantially increase funding for projects and services, enable innovation, and encourage a wide range of supporting actions to build a consensus amongst Aucklanders on the need for urgent change to be accepting of a greater level of risk. Such a radical transformation will reduce VKT, but unlikely enough by 2035. It is therefore critical to look beyond better travel options to encourage avoiding travel or combining trips – the quickest and most cost-effective approach to reducing transport emissions.

To reiterate, current system settings are incapable of addressing the urgency and scale of the challenge. We must:

• consider a wide range of actions, both in transport and adjacent industries

- have a willingness to take risks with new, un-tested actions we cannot rely solely on known, well-researched actions
- enable greater innovation in the technologies, services, processes and business models that support how Aucklanders move
- proactively address the equity impacts of any actions
- communicate the criticality of climate change and create a movement for change.

The breadth and scale of the urgent transformation required demands action from many actors across central and local government, business and wider society. While local government has the ability to influence many of the policy levers highlighted in the discussion document, action from central government is critical.

Urgent reform of policy, legislative and budgetary settings is required to enable deep and rapid cuts to Auckland and New Zealand's transport emissions.

The discussion paper signals, at a high level, Government's commitment to action across many of these areas. While significantly more detail is required to fully understand the nature of the proposed reforms, and their potential emissions impact, we strongly support their intent and look forward to working with Government to further flesh them out.

Constrained budgets, insufficient prioritisation of climate outcomes, cumbersome business case approaches, slow decision-making processes and the time lag between policy interventions and their emissions reduction impacts, create additional challenges for Tāmaki Makaurau to achieve what are already ambitious targets.

Similarly, some policy signals from Government, such as the requirements for local government to accept out-of-sequence greenfield growth, do not align with the urgent need to reduce transport emissions.

At the same time, council also needs to fully utilise the policy levers within its control – land use planning, urban form, road space reallocation, mode shift investments, and parking policy, for example.

As Auckland requires transformative action from Government to deliver on its regional commitments, so too will Aotearoa as a whole require strong climate action from Auckland, particularly for transport, if it is to meet its international obligations.

The discussion below focuses on themes (many of which are touched on in the discussion document) critical to reducing travel by private vehicle through a shift to more sustainable modes:

- Reform of institutional settings
- Increased funding for public and active transport
- Regulatory reform
- Land use planning and urban form
- Travel demand management
- Educational and behaviour change programmes

#### **Reform of institutional settings**

Achieving significant emissions reductions is not possible within the current set of institutional arrangements that govern the way the transport system is planned and funded. Many aspects of these arrangements must be reformed urgently given the scale of the challenge ahead.

The National Land Transport Fund (NLTF) is under considerable strain and is no longer able to meet the needs of the transport sector either in terms of new capital projects, the maintenance of existing assets or the retention and improvement of public transport services. Global cost escalations further exacerbate this issue. New forms of funding to augment the NLTF must be urgently found to ensure the required investments in public and active transport can be delivered in a timely fashion (see next section).

The business case process and other requirements to access what funding is available from Waka Kotahi are slow and costly to navigate and do not support the urgency of action required, nor do they provide councils with certainty that they can deliver their transport programmes. While some recent modest improvements have been made, which are welcomed, more work is needed to align the business case assessment processes with the rapid transformation required, and to ensure funding is directed to the right projects without compromising the robustness of the process.

A review of Funding Assistant Rates (FAR) is also required. Funding the motorway network at 100 per cent, and public and active transport infrastructure and services at a lesser rate, is incongruous with rapidly reducing transport emissions.

A unique Auckland issue pertains to the status of the Auckland Transport Alignment Project (ATAP). ATAP provides a much-needed mechanism through which government and council can agree their shared priorities for, and level of investment in, Auckland's transport system. However, even once ATAP is signed off by cabinet and councillors, the current arrangements around the Regional Land Transport Plan (RLTP), the NLTP and individual business case assessments, effectively require it to be relitigated both on a project-by-project basis and in terms of the overall quantum of funding government has committed to it.

Auckland Council is not suggesting that inclusion in ATAP should remove the requirement for potential investments to be subject to a robust business case assessment process. However, it is appropriate that inclusion in ATAP, and therefore approval by both funding partners, should be recognised in the assessment process.

To this end we suggest further consideration of the status of ATAP and its relationship to both the RLTP and the NLTP is required to provide funding certainty for Auckland – which is particularly important given the disproportionate contribution Auckland will be required to make to national emissions reduction targets.

#### Increased funding for public and active transport

We welcome the commitment made by Government in the discussion document to substantially increase investment in public and active transport, including Auckland's rail and bus networks.

Rail-based rapid transit will play a key role in driving patronage growth in Auckland once the City Rail Link is operational and light rail has been built. However, the ability to improve frequencies in the meantime is relatively constrained. Buses will therefore continue to carry the bulk of passengers for at least the short term. As such, accelerating patronage growth on the bus network is critical if mode shift to public transport is to make a significant contribution to the interim 2030 emissions reduction target.

This requires sustained improvements in network coverage and in interpeak, evening and weekend services, to provide better access to jobs, education and amenities at all times, especially for communities in the south and west of the city.

To date, however, the ability to expand bus services has been severely constrained by the availability of funding. The RLTP 2021-31 supports only limited improvements to bus frequency and coverage across the network. This is not sufficient to support the step change required if climate goals are to be met. Additional funding will be welcomed.

We also suggest that further work be undertaken to lower the current requirement of a 50 per cent farebox recovery. We appreciate this has been set aside during the COVID-19 pandemic, however in the past it has acted as a disincentive to improving the coverage of the public transport network. Instead, it encourages allocation of funding towards improvement of already well-served areas. This has equity implications. It also mitigates against taking a long-term approach to network development because it often takes some time for patronage to build up on new routes. A lower fare recovery ratio could help facilitate:

- lower fares
- increased service levels (frequency and hours of operation)
- improved coverage through the introduction of new routes in poorly served areas.

Substantial additional investment is also required in walking and cycling infrastructure. Active modes can play a very significant role in replacing short car trips, but only if a network of safe infrastructure is available. The TERP's recommended pathway will need to include a very substantial increase in walking and cycling mode share.

#### Regulatory reform to prioritise public transport and active modes

We agree with the discussion document's statement that road space reallocation is key to enabling the cost effective and rapid roll out of infrastructure to better support the take up of public transport, walking and cycling.

Using existing road space to prioritise bus movement and provide safe cycling infrastructure, will be a key element of the TERP. It is also one of the principles underlying the current review of related documents such as Auckland Transport's programme business case for cycling and its parking strategy.

We support regulatory changes to better enable road space reallocation as signalled in the discussion document. However, in streamlining public consultation requirements, care must be taken to ensure a balance with building the social licence necessary to ensure the long-term sustainability of specific interventions.

Council also welcomes potential changes to the rules around integrating improvements with renewals work. Auckland's RLTP includes a \$3.9b allocation for renewals over ten years. It is crucial that this funding can be leveraged to take advantage of 'building back better' opportunities as they arise. Recent changes in Waka Kotahi policies have helped in this regard but apply only to relatively small projects. Further work must be done to consider how process improvements of this nature can be applied more broadly.

There are numerous other matters not mentioned in the discussion document where further regulatory reform could be undertaken to encourage travel by public transport, walking or cycling. Waka Kotahi and the Ministry of Transport have work programmes focused on this (Accessible Streets and Reshaping Streets respectively) which we support. Potential areas for reform include:

• parking enforcement

- pedestrian priority at intersections
- the process for closing roads to car traffic
- priority for buses when pulling out of bus stops
- workplace car parking levies and car parking cash out
- other car parking levies (e.g., public car parks, shopping centres, public facilities)
- e-bike grants, subsidies or tax-deductible repayment schemes
- low or zero emissions zones
- exclusion of fossil fuelled vehicles from certain streets
- parking enforcement on berms and in pedestrian malls
- car parking fines higher than \$40<sup>15</sup>
- taxation of passenger vehicles based on weight
- accessibility and universal design.

Reform in these and similar areas can be an important complement to the large infrastructure and service improvement investments required to enable mode shift. We therefore encourage Government to continue working with councils on defining and implementing the changes required.

#### **Travel demand management**

Auckland Council reiterates it's in principle support for the introduction of congestion pricing in Auckland, subject to revenue generated by the scheme being used to mitigate equity impacts and improve public and active transport. We welcome the Government's continued commitment to working with council on scheme design and implementation.

While road pricing is key in moderating VKT over the medium to long term, its implementation is some years off. Consequently, more immediate travel demand management tools must be considered as part of the package of interventions to bring down VKT.

Parking policy is another tool for managing travel demand. Changes to parking policy can have both immediate and longer-term impacts on people's propensity to travel by car through variations to price, time restrictions and the supply of public car parks. In the longer term the removal of parking minimum requirements for residential developments will also play an important role in reducing VKT.

Auckland Council and Auckland Transport are currently reviewing Auckland's parking strategy to ensure it aligns with climate change objectives by discouraging driving where good alternatives are available.

#### Urban form and land use

We agree with the discussion document's premise that prioritising urban development in areas with good public transport is a key factor in reducing transport emissions. An assessment of the potential impacts of different growth scenarios on Auckland's natural environment found estimated VKT and emissions to be lower in more intensive built form scenarios compared to more expansive scenarios<sup>16</sup>.

 $<sup>^{\</sup>rm 15}$  In contrast, the fine for fare evasion in Auckland is \$150.

<sup>&</sup>lt;sup>16</sup> <u>https://knowledgeauckland.org.nz/media/1159/tr2017-022-assessment-of-potential-impacts-of-different-growth-scenarios-auckland.pdf</u>

Generally speaking, a compact urban form is easier to serve with good public transport and active mode options. As such, people who live in built up areas will often have better transport choices and therefore more potential to reduce their transport emissions, compared to those in outlying areas with fewer transport options.

Auckland Council has a key role shaping Auckland's future urban form through documents such as the Auckland Plan 2050, Auckland Unitary Plan and the Future Urban Land Supply Strategy. Between them these documents take a quality compact approach to growth and development. This means future development will be focused in the existing urban area and in identified future urban areas within Auckland's urban footprint, with only limited expansion into rural areas. This approach aligns well with the narrative in the discussion document.

However, Auckland's current urban form grew out of more expansionary planning approaches of previous decades. While the adoption of the Auckland Unitary Plan in 2016 has catalysed relatively rapid intensification in some areas, changes to urban form take time and it may be many years before the planning approaches of today have a substantial impact on the shape of the city as a whole.

Given this long lead in time it is crucial that land use planning decisions, such as those relating to the implementation of the National Policy Statement on Urban Development (NPS UD), reflect shared council and Government targets of a zero-emissions transport system by 2050.

The NPS UD includes climate change as both an objective and a policy, yet it also requires councils to enable growth in greenfield areas and be responsive to out of sequence plan changes. As such it could enable a more fragmented development pattern that solidifies car dependent travel and increased transport emissions.

We suggest that the resource management reform process must revisit this inconsistency in Government policy and its misalignment with Government and council's stated emissions reduction objectives. Similarly, we welcome the commitment in the discussion document to introducing transport emissions assessments as part of the process for approving urban developments. We await further detail on how these assessments will be conducted, but assuming they carry some weight in the consenting process, we expect they will play a role in helping prevent further emissions intensive urban sprawl.

#### Educational programmes and Behaviour change

Changes to the regulatory environment, increased investment in public transport and active modes, road pricing and other interventions to reduce VKT must be augmented by a strong focus on behaviour change programmes to encourage and enable communities to take up sustainable transport options.

We note and welcome the discussion document's focus on education and behaviour change programmes in schools. However, we suggest these need to be augmented by broader based approaches. Given the scale of the climate change challenge we collectively require a campaign akin to the COVID-19 "team of 5 million" approach. At a more specific level, marketing campaigns and community engagement programmes are especially important to encourage take up when new infrastructure or service improvements come on stream.

We suggest that central and local government work together to develop common approaches to community engagement and behaviour change programmes.

# 53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

We agree with the 30 per cent target. Auckland Council supported Pathway Four in Hīkina te Kohupara, which sets a target to make 27 per cent of the light vehicle fleet electric by 2035.

Any target will be constrained by the limited supply of zero-emission or electric vehicles because of high worldwide demand and vehicle manufacturers' decisions on which markets to prioritise. Therefore, Government actions that support the purchase of electric vehicles will influence manufacturers' decisions to prioritise New Zealand

To get the most impact from the limited supply of electric vehicles, priority should go to the greatest users of fossil fuels i.e., owners of high mileage vehicles, for example, couriers, taxis and ride-share. High mileage vehicles are largely used by businesses, so incentives should also be structured around business costs and benefits (e.g., changes in depreciation rates or fringe benefit tax).

Electric vehicle incentives must also be designed to improve the vehicle fleets' overall safety performance.

#### Pairing fleet decarbonisation with private vehicle demand reduction

Given the low carbon intensity of New Zealand's electricity, policies that promote electric vehicles are integral to reducing transport emissions. The cost of owning and operating an electric vehicle must reach parity with conventional internal combustion engine vehicles to achieve rapid market penetration. These benefits rely on Government action such as the Clean Car Standard and Clean Car Discount.

On their own, however, policies that promote electric vehicles will not be enough. These policies must be combined with interventions to reduce the demand for travel in private vehicles and increase the use of alternative modes such as public transport and active modes.

Aotearoa has the highest rate of car ownership in the OECD and the fifth highest per capita rates of  $CO_2$  emissions from road transport among the 43 OECD countries<sup>17</sup>. Reducing our car dependency by increasing access to sustainable modes will support broader transport and liveability outcomes, such as equity and health.

We raise caution with a reliance on fleet decarbonisation though. With uncertainties around the global supply of zero emissions vehicles, affecting people's ability to transition to cleaner vehicles, and the pace of technological changes, there are significant risks with focusing too heavily on fleet decarbonisation to reduce transport emissions.

#### Targeted support for low-income groups and transport disadvantaged

We are pleased to see that subsidies for low-emissions vehicles have been expanded to include electric micromobility modes such as e-bikes.

Due to the relatively high cost of electric vehicle purchase, it is essential to prioritise access to lowemissions vehicles (through purchasing or sharing) for low-income earners. Targeted support for

<sup>&</sup>lt;sup>17</sup> <u>https://www.oecd.org/newzealand/environmental-pressures-rising-in-new-zealand.htm</u>

low-income groups to access e-bikes and carbo bikes can support an equitable transition, and in some cases, reduce the need for motor vehicles (e.g., second household car).

#### Vehicle emissions standards

We support the measures to strengthen vehicle emissions standards. New Zealand is one of only two OECD countries without a fleet efficiency standard, and as a result has one of the oldest and most polluting vehicle fleets in the OECD.

Of our ten bestselling new vehicles, five are utes (which also benefit from a fringe benefit tax exemption), four are SUVs and one is a car. Light vehicle emissions are 2.65 tonnes CO2 per person in Aotearoa, compared to 0.92 tonnes in the European Union (EU).

We support stronger fuel efficiency standards than currently proposed in the Land Transport (Clean Vehicles) Amendment Bill. While these targets aim for steep emission reductions in the vehicle fleet over four years, they are weaker than similar targets and proposed policy changes in the EU and UK.

In the EU, the target for average light vehicle emissions in 2025 is 81 g/km, and the European Commission is currently consulting on proposals to change the 2030 target from 59 g/km to 43 g/km, and to phase out new internal combustion engine (ICE) vehicles by 203518. In the UK, the newly released Transport Decarbonisation Plan sets out that the sale of new ICE vehicles will be phased out by 2030, with all new vehicles being zero emission by 2035<sup>19</sup>.

By contrast, the Bill proposes an emission reduction target of 112.6 g/km for Type A vehicles in New Zealand by 2025, and 63.3 g/km by 2027, with no targets beyond 2027.

To avoid rebound effects (increased vehicle usage due to lower fuel costs), we strongly recommend that strengthened vehicle emissions standards are coupled with policies that reduce travel demand, such as road pricing.

Other loopholes will also need to be addressed. For example, addressing more relaxed efficiency standards for larger vehicles, which may perversely incentivise greater uptake of SUVs and utes.

#### Vehicle scrappage scheme

We support the introduction of a vehicle scrappage scheme in the first carbon budget. However, strengthened vehicle efficiency standards can increase the cost of future vehicles, which may encourage consumers to hold on to used, less-efficient vehicles for longer.

We therefore suggest the scrappage scheme should enable people to trade in their old, polluting cars to receive discounts on new electric cars, e-bikes, or public transport passes. Other countries have trialled different schemes which we could learn from. For example, France currently offers a 2,500 Euro bonus for people who trade in their combustion engine vehicles for an e-bike. This scheme is not only intended to make the remaining vehicle fleet greener, it aims to reduce its overall number of vehicles.

We welcome the proposed financial support for the installation of home EV charging and financial incentives to opt for low-emissions alternatives (e.g., bikes) instead of vehicle replacement.

<sup>&</sup>lt;sup>18</sup> <u>https://theicct.org/sites/default/files/publications/fit-for-55-review-eu-sept21.pdf</u>

<sup>&</sup>lt;sup>19</sup> <u>https://www.gov.uk/government/consultations/consulting-on-ending-the-sale-of-new-petrol-diesel-and-hybrid-cars-and-vans</u>

#### Changes to tax system

We support Government making changes to the tax system to remove perverse incentives in existing financial and accounting practices. The fringe benefit taxation regime, for example, should be re-examined to consider whether it appropriately incentivises low carbon travel patterns. Government has a uniquely important role in setting clear, fair tax policies that achieve stated policy aims.

# 54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

We support a more ambitious target to reduce emissions from freight transport. We note the Sustainable Business Council's Low Carbon Freight Pathway, reflected in the Climate Change Commission's final advice, has a stronger target of halving freight emissions by 2030 and transitioning to net zero for the sector by 2050. We recommend the ERP adopt this target and the recommendations in the Low Carbon Freight Pathway.

This requires a stronger focus on tackling freight emissions in the first carbon budget, instead of leaving it to the second and third budget. We acknowledge that addressing freight sector emissions is challenging, low-emission heavy vehicle technology is currently limited for example. These challenges should however not mean that emissions from freight transport should not be urgently addressed.

Auckland Transport has started indirectly addressing freight emissions through its Auckland Freight Plan<sup>20</sup> which identifies a range of initiatives to reduce emissions through smarter freight movements that minimise distances travelled and idling time.

#### Actions

Most of the freight tasks in Auckland are short-haul and undertaken by light commercial vehicles and small-to-medium sized trucks for which electrification is already available. We urge Government to develop policies to support the rapid uptake of electric vehicles for these tasks. This includes electric couriers, cargo bikes and vans.

An integrated policy mix is required to reach freight emissions reduction targets. Many of the policy mix principles identified for passenger transport could apply to road freight. For example, switching to low-carbon fuels, expanding proposed vehicle efficiency standards to cover a range of freight vehicle, and mode switching (from trucks to rail freight and coastal shipping where possible).

We believe better use can be made of existing road infrastructure for freight priority, lowering congestion and therefore emissions (e.g., freight lanes on strategic freight routes).

Additionally, complementary land-use planning and resource management activities could support supply chain efficiencies by minimising freight trips, assisting freight consolidation, and minimising the friction between freight and other network users and activities (e.g., in creating dedicated lanes for freight).

We would like to see a centralised, government-backed approach to expand the use of urban consolidation centres for first and last mile delivery. An inner-city consolidation centre has been successfully trialled in Auckland. More funding is required to scale up the pilot.

<sup>&</sup>lt;sup>20</sup> <u>https://at.govt.nz/media/1983982/auckland-freight-plan.pdf</u>

Opportunities for public education could also be considered to reduce freight emissions associated with movement of discretionary consumer goods and encouraging people to consider the environmental impact of their purchases and to find alternative and more sustainable ways of fulfilling demand.

# 55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

Biofuels offer limited emission reduction potential because of their incompatibility with some engines when a high biofuel has a high proportion of the biological component. Renewable fuels do not have incompatibility issues and should also be considered. The costs of establishing biofuel or renewable fuel supply chains are high, and this cost may not be recovered as the fleet becomes electrified and VKT is reduced.

Priority should be on moving away from vehicle use (through reduced VKT) and use of fossil fuel vehicles. Biofuel and renewable fuels should only be used where decarbonisation is very difficult.

# 56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

We support, in principle, the ban on ICE light vehicles by 2030. This ban needs to be signalled well in advance to set expectations and inform the decision-making of the automotive industry and consumers. It also must consider and address the equity impacts on those who cannot afford to replace a fossil fuel vehicle with an electric vehicle (and do not have access to other transport options).

Many countries have already introduced or are seriously considering such bans. The United Kingdom (important for New Zealand as it is also a right-hand drive market) has moved its ban forward to 2030, as has Japan. The high proportion of second-hand imported vehicles sold in New Zealand means that not setting any targets would present a risk of New Zealand becoming a dumping ground for out-of-date, high-carbon technologies.

To be effective, such a ban would need mechanisms of enforcement, such as a clear start year and strong financial penalties for non-compliance. Any restrictions would also need to be designed to reflect the availability, affordability, and safety of alternatives to ICE vehicles. This includes ramping up the provision of public transport, walking and cycling to provide genuine travel choices for people.

Once these policies are in place, a ban on fossil fuel vehicles could be put in place.

#### 57. Are there any other views you wish to share in relation to transport?

There are synergies between safety, travel options, freight, and climate change that are not as prominent as they could be within the consultation document. Whilst the focus is on the climate change component as the core benefit of the ERP, it understates the co-benefits achieved for the other strategic priorities for transport, and the co-benefits that a lower emission transport system brings.

#### Addressing current transport inequity

Our transport system is designed primarily for cars, meaning those without car access suffer disadvantage. These groups include children, the elderly, the disabled community, women and LGBTQI+ groups, low-income people, Māori and ethnic minority groups. These groups also tend to be overburdened by transport externalities such as road harm and transport pollution.

Low income and other transport disadvantaged communities (including rural communities) could see significant improvements to accessibility and travel choice through more accessible and frequent public transport, safe and connected walking and micromobility networks, and more affordable shared and pooled mobility options.

We recommend that low carbon transport policies explicitly prioritise improved access and travel choice for the transport disadvantaged to ensure a just transition. Actions could include:

- targeting investment, and ring-fencing revenue generated from congestion pricing to lowincome areas with poor public transport and active travel options
- creating new foot, cycle and public transport connections such as bridges, greenways and other dedicated rights of way to connect homes with jobs, public transport and public amenities
- incentivising substantial housing growth in areas with good access to public transport and active travel options
- addressing current safety and personal security concerns that prevent people from shifting to public transport, walking and cycling
- increasing access to e-bikes; addressing existing barriers of purchase price, secure parking and maintenance
- collecting a wider set of transport data to better understand the travel needs and patterns of groups such as Māori, low-income people, women, people with disabilities, ethnic minority groups, LGBTQI+ people, seniors, and more
- working with communities to support affordable choices such as shared community vans, low-cost car share, and low-interest loans for people to choose low carbon transport options that work best for them and their whānau.

Improving public transport to reduce transport disadvantage will require much more frequent, reliable, faster, and higher-quality public transport services. Additional funding, particularly for public transport operating expenditure, is needed to support this.

#### Partnering with iwi Māori

We strongly recommend that the Ministry of Transport partners with iwi Māori in the development of a transport decarbonisation pathway for Aotearoa. A tikanga Māori approach to transport decarbonisation will help to address the needs of communities underserved by the transport system, as well as those overburdened by transport pollution.

Partnership with Māori is key to ensuring Māori voices and mātauranga Māori are embedded in the development of emissions reduction pathways. As on-road transport is Auckland's largest source of emissions, increased co-governance opportunities for mana whenua on transport decision-making will enable iwi and hapū to build on their climate action work.

#### **Aviation emissions**

Auckland Council is a shareholder in Auckland Airport, and as such has an interest in how it can be supported to reduce its emissions.

New Zealand's domestic emissions accounts for around 6 per cent of all national transport emissions and have remained relatively unchanged between 1990 and 2016. In contrast, international emissions, while not part of our climate targets, have increased by around 180 per cent since 1990.

Given New Zealand's remote location and the prominence of our tourism sector, failing to address international emissions presents a risk, particularly if global policy action against these emissions is strengthened or New Zealand's export markets focus more on emissions embodied in goods.<sup>21</sup>

We support the report's recommended actions to reduce aviation emissions, including investigating the feasibility of sustainable aviation fuels in New Zealand.

Decarbonising tourism is another critical element of transitioning the sector. The first step in achieving this is to systematically measure the carbon footprint of the visitor economy.

Reducing domestic flying would need to be supported by a substantial improvement in low carbon land and sea-based travel options, such as high-speed regional rail.

#### **Transitioning key sectors: Energy and industry**

# 58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

In our submission to the Climate Change Commission's draft guidance, we supported the development of a national energy strategy to create a pathway to decarbonisation.

Local government needs to be enabled to support alternative, resilient energy options for their communities. From an adaptation perspective, diversifying energy sources will support climate change resilience.

To enable and build alternative energy sources, our land use planning framework needs to support this. In addition, more information sharing and upskilling is needed to understand how to support the proliferation of wind, solar and other renewable energy sources across our built and rural environments.

Policies to accelerate the uptake of small-scale distributed or on-site renewable electricity generation are required, particularly in Auckland which is distant from the South Island's large generation sources. Low-temperature process heat may be better provided by on-site renewable electricity generation.

A national energy strategy should include funding mechanisms for local and community energy (LCE) initiatives. Current Government funding initiatives exclude LCE initiatives, which face high failure rates due to lack of market access and risk exposure, and a lack of policy coordination.<sup>22</sup>There is a risk that the costs of transition are passed on from companies or landlords

<sup>&</sup>lt;sup>21</sup> New Zealand Productivity Commission (2018). Low-emissions economy. Available at: <u>https://www.productivity.govt.nz/inquiries/lowemissions/</u>

<sup>&</sup>lt;sup>22</sup> <u>https://www.sciencedirect.com/science/article/pii/S2210422420300162</u>

to those who can least afford it. In Auckland, over 40 per cent of households now rent. Renters and low-income households will be disproportionately impacted, especially those that cannot afford or are not able to make energy efficiency improvements. Government will need to proactively anticipate and manage these impacts through policy, regulation and incentives. The same considerations need to be made for commercial properties, primarily small businesses.

We recommend Government supporting social, economic and tax policies that support equitable access to energy efficiency improvements to homes and lower emissions transport technologies, e.g., EVs and e-bikes. This should include Government's Social Welfare Reform agenda, designed to make the social welfare system fairer and accessible for all New Zealanders and address the recommendations of the Tax Working Group.

#### 59. What areas require clear signalling to set a pathway for transition?

Security and stability of the electricity supply to Tāmaki Makaurau is critical for meeting the Commission's recommended renewable energy target (at least 60 per cent of total energy by 2035).

We also recommend further policies to reduce or prohibit the use of coal in domestic home heating whilst also recognising that it is important to support and resource an equitable transition for those households that rely on coal, which in some cases is because there are not many other alternatives. There would be significant benefits for air quality and health from such policies. The UK has recently moved to ban sales of 'domestic bagged coal' due to air quality effects.

# 60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

We think a target of 50 per cent<sup>23</sup> of all energy consumed coming from renewable sources by 2035 is a sound target, given that only 40 per cent of New Zealand's current energy use is from renewable sources. We consider a target of 95 per cent renewable electricity by 2030 as ambitious given that it would mean phasing out all coal, oil and 50 per cent of the current natural gas use.

However, this target will not be achieved unless there is a focus on building or replacing this capacity with new renewable energy such as biofuel, wind, solar and large-scale battery storage. Biofuels have an advantage in that they could be used as drop in fuels for the existing infrastructure and not require investment in a new plant. However, this change will not happen under the status quo (which is geared to meeting new demand). It requires a targeted approach with Government funding covering the cost of building new plant or producing fuels.

Auckland's decarbonisation pathway has similar outcomes for grid electricity e.g., all coal switched to solar, half of gas switched to solar/wind by 2030 with all grid electricity to be renewable by 2050. It is anticipated that this will be achieved in Auckland through the installation of solar PV on residential and commercial buildings, process heat switched from gas to electric, and reduction in process heat emissions using waste heat recovery, high temperature heat pumps, best practice technology and switching from gas to biofuels.

<sup>&</sup>lt;sup>23</sup> A target of 50 per cent of all energy consumed is equivalent to a target as 60 per cent of renewable energy as a share of total primary energy supply – page 278, Ināia tonu nei: a low-emissions future for Aotearoa – May 2021 Climate Change Commission report.

# 61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Auckland's industry typically utilises reticulated (mains) natural gas. There are significant cost barriers to converting industrial process heat away from natural gas, and some industries in Auckland that use high temperature process heat do not currently have a feasible alternative. Support for these industries is required to transition from natural gas, particularly for manufacturing at risk of emissions leakage.

A significant number of small and medium-sized enterprises (SMEs) in Auckland use low grade process heat in their processes and production lines, and buildings. As the price of gas increases it is important that appropriate support to those SMEs is included in the regional transition plans.

There needs to be assistance for people to access capital to reduce barriers to the uptake of technology or infrastructure upgrades such as boiler conversions, energy efficiency technologies, and electricity network upgrades. This will be particularly important in Auckland reticulated natural gas is likely to increase in price as supply reduces.

Industrial natural gas use has been supported by the Resource Management Act's focus on air pollutants with health effects. Conversely, biomass combustion for process heat or commercial space heating has been discouraged due to its higher discharges of fine particulate matter. The transition of natural gas to biomass must account for and address fine particulate matter (PM10 and PM2.5) discharges which have health implications.

#### 64. In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold?

We suggest that a "Large Energy User" is classified by energy use or GHG emissions rather than spend.

The Corporate Energy Transition Plans are only for large energy users. We believe small to medium process heat users should also be fully supported through the transition.

# 67. Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and Emissions Reporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed.

Public ferries generate considerable emissions (as marine technology is inherently energy intensive) and are technically challenging to transition to electric, especially for longer routes. Government support is needed for this transition.

# 68. What level of support could or should Government provide for development of low-emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

Switching modes of transport, such as our freight transport fleet to use biofuels and hydrogen can help, but we cannot rely on it to sufficiently reduce emissions. Instead, the focus needs to be on shifting our freight to rail and shipping. The use of rail would also greatly reduce our road maintenance costs, without a corresponding increase in rail maintenance.

#### 69. Are there any other views you wish to share in relation to energy?

It is important that as we electrify our transport fleet and industrial processes, the electricity supply to meet this demand is from renewable sources and not generated from fossil fuels. In 2018, stationary energy produced 26.7 per cent of Auckland's total emissions, and industrial processes and product use produced 21.3 per cent. 57.8 per cent of Auckland's energy emissions are from primary fuel combustion within the region, from fuels such as natural gas, coal and liquid petroleum gas (LPG). Currently emissions from the electricity grid contribute to 9.2 per cent of Auckland's total emissions.

#### **Transitioning key sectors: Building and construction**

The built environment is responsible for a significant proportion of Auckland's emissions, with 24.1 per cent attributable to stationary energy use in residential, commercial, and industrial buildings (including process heat). The construction sector is also a major driver in the demand for emissions intensive materials, such as steel and concrete. The manufacturing of construction materials has a large carbon footprint in the Auckland region.

In general, a more ambitious transformation for buildings is required, particularly with regards to approaches to manage or reduce embodied carbon of construction materials which is a significant issue.

Consideration of transitioning in the building and construction sector would benefit from a broader focus on the built environment rather than the construction of buildings and practices in the construction sector.

# 70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

Auckland Council supports the introduction of mandatory participation in energy performance programmes for existing commercial and public buildings. We consider that mandatory public reporting of building energy efficiency should be included in any energy performance programme. In the UK for example, the use of Display Energy Certificates (DECs) and Energy Performance Certificates (EPCs), and the introduction of Minimum Energy Efficiency Standards (MEES) in 2015, are an example of how mandatory measures have been applied to improve operational energy performance.

We would also support the use of energy performance certificates for all buildings, including residential, and the use of subsidies or low- or no-interest loans for energy efficiency improvements to existing buildings. However, any upgrades must be supported by quality independent advice.

# 71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

The current Building Code is underperforming in delivering healthy and sustainable buildings. Auckland Council has limited ability to drive change in this space and needs strong action from Government to reduce emissions associated with buildings. The building sector will need support for the transition through upskilling and educational support to enable correct analysis of operational efficiency and whole-of-life emissions. Separate to our Building Consent Authority requirements, we could support the sector in an educative role to promote improvements to building practice. If local government is expected to support the sector, we would like this function to be clarified and ensure we are adequately resourced to deliver.

Auckland Council has identified the Construction and Demolition sector as one key industry sector with significant potential for circularity, incentivising deconstruction over demolition. With strong regulatory intervention from Government, waste could be designed out of the building procurement process through:

- careful material selection
- use of materials in buildings that can be deconstructed at end of life and used again
- diversion from landfill of high methane-emitting wastes such as timber
- mandatory targets for recovery of materials.

Biodegradable waste from the construction and demolition industry has a considerably larger emissions reduction potential if timber, for example, is diverted from landfill. Our work in resource recovery has expanded to increase the number of facilities within the Resource Recovery Network and our Climate Plan sets out a commitment to establish a standalone Deconstruction Hub.

There are few incentives for the construction sector to use recycled aggregates and other secondhand building products rather than new. Auckland Council has put considerable effort into influencing these practices and has advocated to Government for an increase in the waste levy and greater Government involvement in product stewardship to help create better incentives. In the absence of an appropriate regulatory framework, we have focused on working with those in the sector who are willing to try something new.

We commend the Ministry for the Environment on its proposals for a new national waste strategy and associated legislative review. An ambitious long-term new strategy is crucial to create the circularity needed in the construction sector. A new waste strategy needs to become a statutory requirement and be supported by new, comprehensive legislation.

Improved national strategic guidance, alongside strengthened regulation, will help to clarify the various roles and responsibilities of both the public and private sector in the construction, resource and recovery and waste sectors. It is expected that the legislative review will result in supporting better decision-making across the infrastructure sector, including between central and local government and industry.

The design of mandatory product stewardship schemes for building products is one regulatory tool which Auckland Council supports. Product stewardship is part of our existing legislative framework however, like the waste levy, has remained under-utilised to date. With the right strategic, legislative and funding mechanisms set up, product stewardship will be a key tool to help reduce significant amounts of material becoming waste in the first place or being disposed to landfill – in turn reducing emissions.

Regulatory settings are also very important as there can be tension between products and design (e.g., some low carbon materials that may not be appropriate for some locations or designs). This information should be extended beyond buildings to include the development of all infrastructure (e.g., three waters and roading infrastructure) and the supporting industries.

This is an emergent field and there is currently insufficient data to properly understand embodied carbon emissions. It is important to be able to measure and monitor progress to understand if new

initiatives in this area are successful. Key requirements for an effective measurement and monitoring framework include:

- reporting of embodied carbon emissions prior to introducing a cap
- standardisation (and therefore comparability)
- a central repository, regularly updated, available to all and, where possible, led centrally.

Industry needs to have good support through availability of emissions and embodied energy data, training and tools to be able to accurately measure and assess carbon emissions, both operational and embodied.

Key gaps in tools and social infrastructure to deliver the changes anticipated are:

- database development for environment product declarations and life-cycle assessment requirements
- coordination of independent industry requirements (waste management, finance, risk and liability).

We also need to address the low operational efficiency and poor thermal performance of our current building stock. In Tāmaki Makaurau, there are buildings which have large-scale planned refurbishments in the coming years due to requirements such as seismic strengthening or building use changes. These large-scale refurbishments present a good opportunity to phase in requirements relating to operational efficiency, occupant health improvements and whole-of-life embodied carbon. The shift to more flexible working arrangements following COVID-19 may drive further changes in building use.

Where buildings are located have a major impact on emissions from sectors such as energy and transport over many decades as people live or work in these buildings. Addressing urban form is therefore equally important from the view of addressing the long-term impacts of what the building and construction sector 'produces'. We address this in more detail in the sections 'Aligning systems and tools', 'Planning and Transitioning key sectors' and 'Transport.'

# 72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

With regard to eliminating fossil gases, we agree that use of natural gas should be phased out. It is important to note that the majority of natural gas use in New Zealand comes from industry (34 per cent), electricity generation (30 per cent) and non-energy use e.g., petrochemical or methanol production (26 per cent). There needs to be a public discussion on when and how or whether those larger users can transition to renewable operations and how that is funded.

We agree that a date needs to be set, but also recognise that a key driver of the use of natural gas needs to be eliminated as part of that process, i.e., the need to heat buildings. The use of natural gas in residential buildings is largely linked to space heating. This need can be addressed through, for example, setting high standards of insulation which would reduce the need for additional heating. The phase-out of gas heating should be linked to the introduction of best insulation standards (like passive house) e.g., the quicker these are implemented the quicker natural gas can be phased out.

We would support the inclusion of an educational campaign. Often consumers are unaware of what they should request from builders and architects for a well performing home. A similar education campaign for builders and architects would assist in removing barriers to uptake.

#### 74. Do you believe that the Government's policies and proposed actions to reduce building-related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

It is important to improve the performance of the current building stock to help reduce building operation costs and improve the health of building occupants. Auckland's vulnerable communities are more likely to live in older, poor-quality buildings. There is at least double the risk of occupants in these sub-standard buildings being admitted to hospital for pneumonia and other building related respiratory illnesses. Overall Pacific people are 8 times and Māori 4.4 times more likely to be hospitalised than non-Māori, non-Pacific peoples from preventable housing related diseases. It is essential that these communities benefit from improved health and performance of our buildings.

It is important that the potential impact of this process on the affordability of housing is considered. There is a risk of the costs being passed on to developers and future household owners, which would have equity impacts for the Auckland region and all of New Zealand.

# 75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?

As stated in Auckland Council's response to the Building for Climate Change proposals, it is important that those proposals enable the outcomes outlined in Auckland Council's Kia Ora Tāmaki Makaurau, Māori Outcomes Performance Measurement Framework. The framework has a focus on Papakāinga and Māori housing, looking to ensure Whānau Māori live in warm, healthy and safe homes. Housing options need to meet the individual and communal needs of whānau in Tāmaki Makaurau. This requires collaboration between the public sector, mataawaka, mana whenua and communities to ensure Māori housing is fit for purpose. The focus on operational efficiencies and improving occupant health and wellbeing strongly supports these outcomes. Improving operational efficiencies will reduce household occupant costs, supporting both renters and household owners. However, there is a risk of increased capital housing costs, which should be carefully analysed with respect to culturally specific considerations for Māori.

Ensuring that whānau Māori live in warm, healthy and safe homes, and that housing options meet the individual and communal needs of whānau in Tāmaki Makaurau, is a priority for the council and the Independent Māori Statutory Board. Both believe there is scope for government to do more around improving the quality of data on housing outcomes for Māori, enabling Māori housing providers, land leasing, and jointly delivering housing programmes with local Māori. 76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

There is an additional area that must be considered.

A barrier to the uptake of low carbon products, especially ones which are new and innovative, is the resistance from consenting authorities. This stems from associated risk and liability and statutory timeframes that must be adhered to. To help address this challenge, we recommend MBIE review the "acceptable solutions" for products, which do not require specific engineering calculations. Acceptable solutions should be regularly reviewed and easy to access to help increase market uptake. The technical and quality standards are important to ensure building materials are to an adequate standard, but these should be flexible to reflect new products and solutions.

# 77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

Over-ordering of materials are commonplace, for example, each new house built is estimated to generate, on average, around four tonnes of waste with those discarded materials valued at \$31,000<sup>24,25</sup>. These are materials the homeowner pays for but neither sees nor gets any benefit from, and when disposed to landfill, contributes further to emissions. A contestable fund could be used to develop the tools, data, and resources to allow industry professionals to easily access information to help the building industry support waste minimisation (and emissions reduction) from the design stage through to occupancy.

The Climate Change Commission's draft guidance made no recommendations for reducing the embodied carbon of buildings (or infrastructure). This is a significant omission and a lost opportunity. We urged in our response to the Climate Change Commission's draft guidance that new recommendations are needed for buildings to address the emissions associated with the manufacture of construction materials including promotion of low carbon industries and innovation in Aotearoa, such as engineered timber.

A report by Thinkstep - Under construction: Hidden emissions and untapped potential of buildings for New Zealand's 2050 zero carbon goal<sup>26</sup>, notes that the total carbon footprint of New Zealand's buildings, from a production perspective, is 6 per cent. Through construction material improvements, the report notes that 2.5 per cent of New Zealand's production emissions could be reduced (excluding biogenic CO<sub>2</sub> and CH<sub>4</sub>).

Additionally, a focus on infrastructure carbon can result in significant reductions in emissions for a construction project, especially when considered during the early planning stage. The Construction Sector Accord has recognised Watercare Services Limited as a beacon project with their 40/20/20

<sup>26</sup> <u>https://www.thinkstep-anz.com/resrc/reports/hidden-emissions-and-untapped-potential-of-buildings-for-new-zealands-</u> 2050-zero-carbon-goal/

<sup>&</sup>lt;sup>24</sup> Radio New Zealand. Typical Auckland House Build Wastes \$100k. 2015.

<sup>&</sup>lt;sup>25</sup> <u>https://knowledgeauckland.org.nz/media/1071/tr2019-009-cba-on-waste-diversion-from-landfill-homes-land-community-auckland.pdf</u>

vision which includes a target for a 40 per cent reduction in carbon in the construction of infrastructure.

# 78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

Increasing the longevity of new buildings and their components could reduce avoidable new builds in the future. Design measures such as low-damage principles could also support their longevity by ensuring buildings would be useable after an earthquake or other natural disaster.

In our feedback on MBIE's Building for Climate Change Programme consultation, we suggested that if the building life cycle stages were extended in future to include the building end-of-life stage (C1 - C4) and benefits and loads stage (D), the whole-of-life emissions should be reported separately from the construction and operation phases (A1 – B5). This would prevent end-of-life assumptions, which have high variability (e.g., recycling rate), impacting the front-end embodied carbon footprint of a building.

Auckland Council's Waste Management and Minimisation Plan 2018 supports moves to reduce construction and demolition waste. Key action areas that may be of assistance include:

- Requiring physical works (new buildings, refurbishments, developments and demolitions) to produce Waste Avoidance and Resource Recovery Plans, taking into account the waste hierarchy, to minimise waste to landfill. Updating procurement practices to support this action<sup>27</sup> will assist.
- Promoting projects that demonstrate the use of recovered materials in construction and work to find solutions to blockages that limit their use. Currently due to warranty issues or lack of specifications for alternatives, there is a reticence from some construction companies to use recovered products. Addressing these types of barriers should also be part of the Building for Climate Change programme.
- Working with the construction and demolition sector to identify issues and opportunities around developing markets for key materials (e.g., crushed concrete and treated timber).
- Identifying suitable projects for pilot projects to quantify financial and nonfinancial impacts of deconstructing rather than demolishing buildings. Pilot projects can demonstrate the waste reduction potential of deconstruction.
- Developing the Resource Recovery Networks and deconstruction hubs that provide infrastructure for industry to exchange key materials and share best practice expertise.
- Developing tools and guidelines to educate the wider construction industry and supporting community and social enterprises into construction and demolition initiatives.
- Using demonstration projects to drive demand for recovered materials. As an example, Auckland Council is developing a concept for a resource recovery park (eco-park) in south Auckland which is based on the concept of a circular economy.
- Consideration of kitsets and off-site partial construction which can reduce off-cuts and overordering of supplies to construction sites.

<sup>&</sup>lt;sup>27</sup> Auckland Council's <u>Sustainable Procurement Framework</u> was endorsed in 2018 and aspires to create positive impact for our suppliers, contractors, and the communities we serve. Zero waste is one of the framework's objectives and aims to work with our supply chain to minimise waste to landfill and developing zero waste thinking in all our activity.

# 80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

Industry will need to be brought into the transition and be willing to change. This will require extensive training and support across the industry. It is also important to consider that New Zealand might have a larger challenge than international examples due to our unregulated border regarding movement of building products. In Europe, for example, there are tighter controls on cross border movement of products used in construction.

#### 81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

Auckland Council is strongly supportive of thermal performance requirements based on heating and cooling demand. The design of a new building can significantly impact its space heating and cooling needs. Requirements based on heating and cooling demand will help drive an increase in passive building design. This will increase the resilience of buildings, enabling them to maintain a healthy temperature during extreme weather events, even with added complications such as power outages. Space heating is also a large contributor to the energy use within a building, and, as addressed in the consultation paper, it is often generated through combustion of fossil fuels.

# 82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

Carbon emissions cannot be managed unless they are measured. Infrastructure designers have the greatest ability to influence carbon prior to construction commencing. With no universal tool available to measure this, Auckland Council and Watercare have developed a tool (the Carbon Dashboard) to assist in the quantification of embodied carbon within water and wastewater assets. The Carbon Dashboard will also be used to measure operational carbon in new and existing infrastructure assets to give a whole of life value. Inn future it will be used for all stormwater projects. Watercare has set a target to reduce the emissions associated with construction of infrastructure by 40 per cent by 2025.

Government support must extend to engagement with the construction industry at a time when critical infrastructure investment decisions are being made. Without a consistent methodology, the construction industry will either continue to disregard the implications of carbon or use different calculators. To mitigate this, carbon tools need to be rapidly deployed, and their use mandated in all public infrastructure projects. Auckland has already invested in such a tool, and it can be made available to other councils that are unlikely to have the resources to develop their own measurement systems. Industry and local government using one consistent tool will enable consistent reporting on embodied and operational carbon within infrastructure projects.

The building sector is an example of where consideration needs to be given for not only reducing emissions but also adapting to the impacts of climate change through, for example, incentivisation of water sensitive infrastructure to offset the likely increase in impervious surface in urban areas. With temperatures set to increase, there is a need to consider efficient cooling for new builds, and potentially retrofitting of existing buildings to improve their performance, both of which contribute to reducing emissions.

#### **Transitioning key sectors: Waste**

Council is providing a separate submission to the Ministry for the Environment on proposals for a new waste strategy and associated waste legislation. Please refer to that submission for further details on council's position regarding a zero waste, circular economy<sup>28</sup>.

# 89. The Commission's recommended emissions reduction target for the waste sector significantly increase in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

Auckland Council recognises that biogenic methane, although not a long-lived greenhouse gas, contributes significantly to climate change and that it is prudent to reduce these emissions from both agriculture and waste. The major sources of methane emissions from the waste sector are the anaerobic decomposition of organic materials disposed of in landfills and other dumps. Thus, emissions reductions can be expected though increasing diversion of these materials from landfill. Such materials include food waste, green waste, textiles and timber.

Auckland Council supports a 2035 target for reducing waste biogenic methane, whereas previously there had only been one for 2050.

We also support a target of 40 per cent reduction in waste biogenic methane by 2035, having considered the Commission's recommended reduction target to not be ambitious enough.

Auckland's decarbonisation pathway provides an indication of the reduction of some of the key sources of waste biogenic methane. Those are a 30 per cent reduction in food waste and 30 per cent of the remaining waste diverted to anaerobic digestion or compositing, and a 30 per cent reduction in paper/cardboard.

# 90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?

Auckland Council supports more funding for education and behaviour change initiatives that help households, communities and businesses to reduce organic wastes and divert more from landfill. However, we recognise that Government policy interventions, including regulations, are also essential to deliver systemic changes. There are some critical system changes needed to enable greater access to equitable and competitive services and products that inherently result in better environmental outcomes.

We commend the Ministry for the Environment for the release of its consultation document on proposals for a new waste strategy and review of waste legislation. We consider this has the potential to create the wider system changes required to plan for and stimulate investment in the resource recovery sector, develop new waste minimisation and diversion services, design and implement more mandatory product stewardship schemes, and create systems for individuals, communities, businesses and industry to take better responsibility for managing and minimising waste. The proposed action aligns well with actions already committed to in Te Tāruke ā Tāwhiri: Auckland's Climate Plan and council's Waste Management and Minimisation Plan (2018) relating to preventing and reducing food waste and construction and demolition waste. These actions include

<sup>&</sup>lt;sup>28</sup> <u>https://consult.environment.govt.nz/waste/taking-responsibility-for-our-waste/</u>

delivering education and behaviour change programmes and advocating for government policies and funding to drive waste reduction.

# 91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

Higher waste disposal costs will result from Government increasing the waste levy over the next few years, as well as from costs associated with actions to reduce landfill emissions (either from installing landfill gas capture systems or impacts from proposed bans of organic materials). The waste levy funds can be used to invest in a range of waste minimisation initiatives and infrastructure services. Households, communities and businesses can be supported to reduce their disposal costs by the provision of infrastructure and local services (funded through the waste levy) to enable more organic waste avoidance and diversion.

Both local and central governments must also consider how to best empower lower socio-economic communities to participate in waste minimisation, and not create initiatives that instead drive increased vulnerability. Part of this is enabling financial security to ensure a fair safety net for those households most impacted by financial increases and enabling their ability to invest in reusable items or participate in alternative diversion services. Government must recognise and respond to these impacts in the first instance, as Auckland Council has limited mechanisms to create equity in these ways.

Efforts must also be made to ensure that separation and diversion of materials is easy and can be done by people who are already balancing a range of priorities. Auckland Council recognises this in our approach to food scraps for example. This includes prevention and redistribution efforts, such as Love Food Hate Waste or ShareWaste, promoting home-composting via community workshops, and providing a region-wide kerbside collection so all Aucklanders can access an alternative diversion service for their food scraps.

# 92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

As major sources of methane emissions come from the waste sector, Auckland Council supports a focus on diverting organic waste disposal out of landfills and other dumps. Council only controls 20 per cent of Auckland's waste stream. We are therefore limited in our ability to address waste handled by the private sector. Working in partnership with the private sector and community, through greater Government guidance and regulation via new waste legislation, is essential to the success of initiatives to reduce emissions in Auckland. We support the banning of certain organic materials to landfills by 2030, provided there are alternative ways to reuse, recycle or recover the materials. We highlight the need for Government to identify appropriate funding mechanisms (other than rate increases) that would be required to support local government to deliver on any compliance and enforcement roles that may come from imposing bans on certain organics being disposed to landfills.

# 93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

There are numerous wastes that contain varying degrees of organic components, including soils with high organic content, sludges, textiles, composite packaging, or composite building products. Supporting a ban on all organic materials going to landfill will therefore require clear definitions. A
ban would require changes in legislative and enforcement powers, alongside allocation of sufficient resource and funding to ensure compliance.

Auckland Council supports the banning of certain organic materials to landfills unsuitable for gas capture, provided there are viable alternative destinations for the banned organic and biosolid materials to be diverted to or reuse opportunities. Alternatives that sit higher up the waste hierarchy need to be prioritised, invested in and/or established before bans are imposed (e.g., deconstruction hubs for building products, recycling of paper/cardboard, composting of green waste/food scraps, or anaerobic digestion of food scraps). Further, the use of certain organic materials as fuels in boilers or small-scale high-temperature furnaces/wood burners may be viable alternatives to disposing to landfills without landfill gas capture. Where alternative processing or resource recovery options are not available, Auckland Council does not necessarily recommend that in all cases banned organic materials should be transported to other landfills with gas capture instead. This may not be a practical alternative and/or, depending on the distances and transport logistics (e.g., backhaul opportunities), could contribute to adding to net transportation emissions.

There remains limited capacity for onshore processing and recycling of paper/cardboard materials across Aotearoa New Zealand. For over a decade, Visy Recycling (NZ) Ltd, council's Materials Recovery Facility (MRF) owner-operator, has predominantly relied on international markets for the sale of its recyclable 'mixed fibre' (paper and cardboard) commodity. Approximately 55,000 tonnes of mixed paper/cardboard are sorted at the facility and sold to end-markets each year. The financial impacts on global recycling markets following the enforcement of China's 'National Sword' policy in 2017/2018 have been significant, with fewer export markets and falling commodity prices. The COVID-19 pandemic has caused further instability with export markets and shipping, and the risk remains that off-shore markets for mixed fibre may close.

To respond to recycling markets' volatility and the need to invest in recycling infrastructure, council is the recipient of significant central government investment (\$16.6 million) from the COVID-19 Response and Recovery Fund to upgrade the Auckland's MRF. The upgrades will: a) improve the separation of materials - plastics, cardboard, paper specifically; b) improve the quality of the separated materials; and c) increase the facility's processing capacity. Despite better quality cardboard and paper being able to be sorted at the MRF following the upgrade, the materials may still be exported offshore unless the capacity of cardboard and paper recycling/processing in NZ increases.

# 94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

There are a number of key issues to take into account when considering landfill gas capture:

- As suggested in the consultation document, not all landfill sites may be suitable.
- Landfills are a significant source of fugitive methane emissions where harmful gas is released prior to capping and gas collection system installation.
- Effective feeding of power back into the central grid from landfill gas power generation is extremely complex and expensive. Currently, there are only six landfills in Aotearoa that have gazetted Unique Emissions Factors, which suggests that this technology is not currently widespread.

• While some Auckland's landfill operators report achieving a 95 per cent gas capture rate, analysis suggests that traditional landfills only achieve this capture rate after 16 years of operation<sup>29</sup>.

Currently, small landfills are not required to have any gas capture under the National Environmental Standard for Air Quality Regulations. Investigation into the feasibility of retro-actively installing gas capture into older landfills should be undertaken to minimise methane emissions, as well as priority given to increasing capture rates in all Class 1 landfills. With retro-active gas capture and improvements at Class 1 landfills, the targeted emissions reductions are likely achievable.

As mentioned in our feedback to the Commission earlier this year, particular attention should be given to regions without high performing landfill gas capture systems when considering controls and interventions. Other considerations include the size of the landfill, whether the landfill is closed or operating, the estimated composition of material disposed in the landfill, composition of material being disposed to the landfill from the region, and access to or investment in alternative organic processing infrastructure within the region that supports ongoing diversion of organic wastes.

Notwithstanding the importance of installing landfill gas systems at suitable landfills, resource recovery infrastructure should also be prioritised and invested in, as per the waste hierarchy; particularly if funding comes from the waste levy where the impetus of the levy is to divert waste from landfill. This is especially pertinent for methane emitting organic material (green waste, food scraps, timber, textiles, etc), however is also relevant to any materials diverted from landfill given the co-benefits that come from enhancing the circular economy and creating jobs.

We recommend that any demand for electricity from waste materials does not diminish investment in infrastructure that supports the diversion of organic materials towards beneficial, regenerative, or circular uses as a priority. Investing in last resort technologies such as burning or landfill gas to energy systems should not be given priority over investment in the diversion and recovery of materials.

# 95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

We support a more standardised approach depending on the design of the collection systems and the roles, and functions expected of local government to support changes. Auckland Council provides kerbside collection services for eligible properties, some of which are businesses. Standardising systems for all business sectors, through legislative changes, would be particularly useful as Auckland Council only controls 20 per cent of Auckland's waste stream and limiting our ability to address waste handled by the private sector. Recycling collections in Auckland should not be limited to the types of systems that may suit other smaller centres or communities around the country. We also support the introduction of a national container return scheme for beverage containers, and this should be implemented before shifts to standardise kerbside systems. Any system must be open to continuous improvement, collecting a wider range of materials as time goes on and stimulating the need for end-markets.

<sup>&</sup>lt;sup>29</sup> Levis, J. and Barlaz M. 2011. Is Biodegradability a Desirable Attribute for Discarded Solid Waste? Environmental and Science and Technology. Vol, 45, 13

# 96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?

Auckland Council supports the idea of separating materials at transfer facilities.

In efforts to reconfigure the traditional function of transfer stations, we are working to improve the resource recovery landscape in Auckland. Auckland Council's revised Resource Recovery Network (RRN) strategy, adopted in February 2021, reflects the current global context of changes to recycling markets and impacts of COVID-19 and significantly increases the ambition of the Resource Recovery Network. Key features of the revised strategy include opening 21 facilities by 2031, compared with the proposed 12 in Auckland's Waste Management and Minimisation Plan 2018. This includes an additional nine Community Recycling Centres (CRC) and two Resource Recovery Parks (RRP). The Resource Recovery Parks are designed and operated to maximise diversion of both domestic and commercial waste materials. They accept the same materials as transfer stations but separate them to send on for reuse/recycling instead of consolidating for disposal.

### 97. Do you think the proposals outlined in this document should also extend to farm dumps?

Auckland Council agrees that proposals such as organic waste bans or gas capture systems should be extended to farm dumps, given organic waste disposed to farm dumps contributes to our emissions profile. However, because farm dumps remain largely unregulated, establishing the necessary compliance, monitoring, and enforcement framework will be challenging. More information is required to better understand the extent of the problem, from both a waste management and emissions reduction perspective, and what resourcing and funding would be required to support the implementation of any new proposals.

# 98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?

We recommend the introduction of better regulatory tools and enforcement powers to help improve farm waste management practices. Council supports the proposed duty of care concept in the Ministry's waste consultation document, as one potential mechanism. Stronger incentive-based schemes, investment in farm-based technologies, and education initiatives can also assist with promoting better farm waste management, with a focus on reducing emissions (e.g., composting, or small-scale anaerobic digestors, or rural collections of organic wastes).

### 99. What other options could significantly reduce landfill waste emissions across Aotearoa?

A summary of some key considerations is listed below with further comments provided in Auckland Council's submission on the Ministry's consultation document regarding a proposed new waste strategy for Aotearoa New Zealand and associated waste legislation.

• Establishing better systems to gather data on waste composition and tonnages across the country and improving our understanding of the number and location of disposal sites/farm dumps will assist with our overall emissions reduction plan. We recognise that organic material is a contributor of biogenic methane and significantly more problematic than other waste streams when disposed of to landfill, however we want to have the tools and data to better measure and quantify our emissions contributions. We encourage the Ministry to provide more emission factors for different waste streams and recovery options, regardless of whether they fall within the scope of the Emissions Trading Scheme.

• Waste management is a transport-intensive business, with a lot of investment in time and vehicles to move waste from collection to diversion and disposal sites. Around 40 per cent of our waste to landfill is currently trucked out of the region (a round trip of 140 – 300 km). It is important to highlight, however, from council's own research into carbon emissions relating to kerbside services and other supporting international research<sup>30</sup>, the emissions attributable to transportation is a small proportion of total emissions attributable to the waste material (i.e., a far greater proportion of GHG is released when disposed to landfill, than from transporting it from A to B). Regardless, congestion, load efficiency and greenhouse gas emissions from transport are all considerations for future waste planning.

Managing emissions from wastewater is a challenging and emerging field in the water industry which contributes to both emissions in landfill and as another component of the waste category. Watercare treats around 400,000 m3 of wastewater every day. The discussion document highlights further work is required for the quantification and abatement of emissions from wastewater and that these will be the focus of future budgets. We would like to contribute thinking and proposals in this area as described below.

We agree that there are a range of challenges in quantifying and reducing emissions from wastewater. The current use of default emissions factors that often have a population based primary driver creates a significant challenge for the real measurement of current emissions and tracking any process related upgrades that are made to reduce emissions. We recommend that a priority is placed on better research, analysis, tools and guidance for measuring wastewater process emissions and that the Government has a role to play in partnering with industry to progress this area. This issue should not only be addressed in future budgets, but the fundamental research into better understanding of these process emissions should start now.

This view is reflected by WaterNZ as well as other global water industry groups. WaterNZ has joined forces with other industry players<sup>31</sup> to call on greater investment to tackle process emissions globally and has called on Governments to support the water sector in going further and faster to reduce emissions from processing wastewater. We support this approach and recommend a nationally led approach for wastewater process emission measurement and investment in technologies and processes to reduce emissions from this source.

There are existing opportunities for emission reduction that can be invested in as well as considerations that need to be included when approaching this topic. These include:

- Introduction of pre-treatment and side-stream treatment processes to tackle problem areas more effectively: Watercare is currently undertaking pilot and investigative work in side stream treatment and are looking at advanced pre-treatment to capture more wastewater components to produce biogas. At present we have not identified any specific technologies for pre-treatment of wastewater over and above primary sedimentation. There are arrange of possibilities around pre-treatment that could allow us to combine capture of solids for increasing gas production as well as building on the principles of a circular economy.
- Investment in advanced wastewater treatment plants that move away from oxidation ponds for treatment: In many instances the industry is moving away from oxidation ponds for reasons

<sup>&</sup>lt;sup>30</sup> Greenhouse gas emission factors for recycling of source-segregated waste materials, Resources, Conservation and Recycling: 105(2015) 186–197.

<sup>&</sup>lt;sup>31</sup> <u>https://www.waternz.org.nz/News-and-Events/Story?Action=View&Story\_id=1586</u>

related to tightening of discharge requirements- mainly related to nitrogen. Further urgent work is required in this area to ensure that we do not swap out oxidation ponds for more advanced and often more energy intensive and embedded carbon intensive processes that trade one emission type to another. National guidance on emissions relating to wastewater treatment and technologies would support this understanding and allow considered decisions to be made. Emissions from oxidation ponds need to be quantified and understood in a lot more detail before decisions about moving away from these is made on the basis of carbon emissions.

- Further investment in biogas generation, treatment and modernised co-generation engines
- Maximising carbon removal in the organic material prior to disposal (for example digestion and thermal hydrolysis processes for biosolids) increases the beneficial capture of methane for energy recovery and reduces the landfill emissions of methane. Additionally, the beneficial application of organic materials to land increases carbon sequestration by returning carbon to NZ's carbon depleted soils.

### Transitioning key sectors: Fluorinated (f) gases

The consultation document is forward looking and discusses the programme of work around Kigali and the phasing down of HFCs or replacing HFCs with gases with lower Global Warming Potential (GWP). However, the programme of work to better manage existing (legacy) HFCs (i.e., those that are in equipment already in use) is not strongly indicated.

Auckland Council understand New Zealand's current leakage rate is very high and could overshadow any benefits gained by the phasedown. This equipment has long lives and this legacy HFC issue needs urgent coordinated regulation and enforcement. Auckland Council recommends coordinated effort should come through creating a mandatory, regulated product stewardship under the Waste Minimisation Act 2008 (or proposed new legislation), and for a scheme to cover legacy products as well as imported products.

Our experience is that those who handle this equipment are not always aware of their responsibilities and obligations under the Montreal Protocol. For example, scrap metal dealers are a relatively unregulated sector of the recycling market. We are also aware that equipment with HFCs can end up as scrap metal or at its own transfer stations without knowing whether the HFCs having been responsibly removed and destroyed. Again, this is a cross-governmental challenge that intersects with MBIE and WorkSafe.

Members of the public are not aware of the Global Warming Potential of domestic fridges and airconditioners. During natural disasters such as floods, refrigerators are often needing to be removed *en masse* because they have contaminated food in them or are water damaged. Whether or not the refrigerants are appropriately managed falls to local government.

Auckland Council has undertaken work to address the issue of emissions from refrigerants including changing the methodology for inorganic collections and requiring these to occur within property boundaries (instead of on the kerbside) which deter scavengers from stripping equipment for metal in turn releasing synthetic greenhouse gases; as well as setting up a network of Community Recycling Centres in a good position to perform degassing services for household refrigerants in the future.

We support taking a product stewardship approach for refrigerant gases but again, this is typically forward-looking for new equipment entering the NZ market. There needs to be sufficient funding in

the system to provide support for users to transition older equipment to the new gases and safely recover the legacy gases without leakage. Barriers to retrofitting equipment need to be overcome urgently, otherwise the phasedown may be seen as too aggressive by industry. Council understands that industry is concerned about matters such as voiding warranties for significant plant and equipment with a long life. These are the sorts of barriers that need to be addressed.





# **Appendix one**

Local board input





### LOCAL BOARD SERVICES

### E mahi ana mātou i te mahi mō Tāmaki Makaurau

# Local Board feedback on the National Emissions Reduction Plan

19 November 2021



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Feedback was not received from the following local boards:

- Aotea-Great Barrier
- Devonport-Takapuna
- Hibiscus and Bays
- Kaipātiki
- Upper Harbour
- Waitakere Ranges



# **Albert-Eden Local Board**

### That the Albert-Eden Local Board:

- a) note that:
  - i. because emissions are cumulative, the more we reduce emissions in the short term, the less overall emissions and climate damage will have occurred by 2050.
  - ii. the Climate Change (Zero Carbon) Response Amendment Act set a national target to reduce net emissions for all greenhouse gases to zero by 2050 given that the net zero target is required of Aotearoa New Zealand to meet its commitment to the Paris Agreement, which is to limit the global average temperature rise to 1.5oC above pre-industrial levels. In addition, The Act requires Government to set five yearly emissions budgets out to 2050.
  - iii. the Government is also addressing climate change through the resource management reforms, for both mitigation and adaptation through for example land use planning and intensification, and identification of areas to avoid for development.
  - iv. the Emissions Reduction Plan (ERP) must be in place by the end of May 2022, will set out strategies and policies to meet the first emissions budget (2022-2025).
  - v. the policies in the ERP will span every sector of the economy and include changes to our funding and finance system, the way we organise our urban areas, and a shift to a circular economy and also set out strategies and policies to manage the impacts the proposed policies may have on employers and employees, regions, iwi, and wider communities.
  - vi. the Government is also wanting to hear about steps which communities and particularly the private sector can take to enable a low carbon transition, and what they need from Government to support those changes.
- b) support:
  - i. the overall strategy
  - ii. meeting the net-zero challenge
  - iii. central and local government working closely with Te Tiriti partners on the ERP
  - iv. proposed packages being transport, energy and industry, agriculture, waste, building and construction, forestry, research and innovation and circular economy.
  - v. investment in actions around transport, noting that 43.6 per cent of Auckland's emissions are from transport which is double the nationwide average.
- c) request:
  - i. funding for local boards of Auckland Council to develop and deliver community based local climate action plans
  - ii. funding for local boards to implement urban ngahere strategies
  - iii. further subsidies to encourage both solar power initiates in urban areas
  - iv. significant increase in central government funding directed to rapid transport infrastructure and other transport measures in Auckland to lift uptake for example; light rail, electric micro-mobility facilities, infrastructure for active transport and micro-mobility and Accessible Streets programmes
  - v. the Ministry of Transport and other organisations promote multi-modal transport for example, through increasing secure bike parking at rapid transit stations and allowing bikes to be carried on buses.
  - vi. adequate resourcing for iwi and other Māori organisations to participate fully in developing and implementing emissions reduction plans



- vii. that support be provided to help businesses and community organisations develop and implement emission-reduction plans
- viii.that additional support be targeted to groups and communities who may experience additional difficulties taking up mitigation and adaptation measures.



## **Franklin Local Board**

That the Franklin Local Board:

- a) overall support for Auckland Council's feedback to the Governments Emissions Reduction Plan submission
- provide the following feedback to the Governing Body on the Government's Emissions Reduction Plan submission:

### Meeting the net-zero challenge: Transition pathway

- i. including an additional principle about engaging and educating the public as engaged communities and societies play a significant role in helping or hindering massive societal shifts on complex issues and a flexible and pragmatic approach is required to bring communities, in particular rural areas, along on the journey as opposed to forcing them which could create outcomes that are not practical or able to be reasonably achieved
- ii. agree that Local government has an important role to play in reducing emissions at a local level as its scope of influence extends beyond urban and transport planning, to many services that engage communities. The local board supports having a strong national direction for local government and support the call for all Government agencies and crossparliament parties to have an open, combined approach to climate change policies.

### Aligning systems and tools: Funding and finance

iii. support policy interventions to be prioritised to deliver systemic change and in particular support the focus of behavioural and societal shifts to delivering the net zero emissions target. There are opportunities where shifts in behaviour could deliver deep emissions reductions and policies could help deliver this and suggest that central government should establish policy outcomes and funding mechanisms for behaviour change programmes to educate and embed a cultural transition to low carbon.

### Aligning systems and tools: Moving to a circular economy

- support the circular economic principles being critical to achieving these goals, envisaging a future which reflects environment-centric principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems
- v. advocate to work with local business, industry and resident groups to deliver a circular economy and low carbon living education programme to enable our community to respond to climate change issues for example the local board supports industries that turn domestic and commercial plastic into premium products like fence posts like Future Post based in Waiuku that work with Auckland Council to collect soft plastics that are not currently being collected
- vi. encourage support for research and design for local companies to look into products that support the circular economy like unwanted and unusable food turned into starch bags.



### **Transitioning key sectors: Transport**

- vii. welcomes the commitment made by government to substantially increase investment in public and active transport, including Auckland's rail and bus networks. This requires sustained improvements in network coverage and in interpeak, evening and weekend services, to provide better access to jobs, education and amenities at all times, especially for our rural communities where there is limited public transport.
- viii. rural towns and settlements have to rely on private transport just because of their remote proximity to urban Auckland, and therefore it is not uncommon for a single-family household to have up to 5 cars. With smaller section sizes and narrow streets for on-street parking being implemented in rural settlements and towns, there are impacts with large vehicles using the roads to connect between rural and urban based industries
  - ix. raise concerns about the focus on urban development (with readily available services/infrastructure) and a reduction on parking requirements and road width. This will create more of the developments we are currently encountering with minimal residential parking and reduced road width without any public transport options. The need for private vehicles in certain circumstances must be recognised.

### **Travel demand management**

- x. support in principle the introduction of congestion pricing in Auckland, subject to revenue generated by the scheme being used to mitigate equity impacts to accelerate delivery of ATAP (including climate change mitigations identified within), be allocated to deliver a mix of roading, public transport and active transport.
- xi. note that a congestion charge will create equity issues both in terms of those who cannot afford the implications of congestion charging (financial deprivation), but also those who don't have existing PT services/alternative solutions available to them (the transport choice deprived and physically isolated communities of Auckland).
- xii. believe that organisations representing heavy vehicle interests are best placed to comment on equitable approach to heavy vehicle charging

### Transitioning key sectors: Building and construction

- xiii. agree that built environment is responsible for a significant proportion of Auckland's emissions, with stationary energy use in residential, commercial and industrial buildings (including process heat). The construction sector is also a major driver in the demand for emissions intensive materials, such as steel and concrete and has a large carbon footprint in the Auckland region.
- xiv. recognise that material such as steel will continue to be a vital part of building and construction and that with the Glenbrook Steel Mill is an important part of the regional and national economy and local community, there must be a collaborative and supportive approach towards these industries to assist them to transition to a reduced carbon footprint.
- xv. support a flexible approach is required of transitioning in the building and construction sector as it would benefit from a broader focus on the built environment rather than the

E mahî ana mătou i te mahî mô Tâmaki Makaurau



construction of buildings and practices in the construction sector, particularly with regards to approaches to manage or reduce embodied carbon of construction materials which is a significant issue.

xvi. support transitioning in the building and construction sector to be focussed on new buildings however, there needs to be a plan to address existing buildings to improve health and wellbeing outcomes. We need to address the low operational efficiency and poor thermal performance of our current buildings which can be improved by adding water tanks that capture water that can be used for maintenance and cleaning the building as well as new technology to provide heat to swimming pools as well as hot water for our offices. The board understands that we need to take a gradual approach is required to the implementation because of cost implications.

### Transitioning key sectors: Waste

- xvii. supports a local transition to circular economy approach to waste management and enable local climate action through funding locally accessible landfill diversion facilities such as the Waiuku Community Recycling Centre and support community-led initiatives that enable locals to divert waste from landfill
- xviii. emphasis should be placed on the creation and support of smaller localised community recycling centres (eg Waiuku) as opposed to larger sub regional type ventures that would require people to travel further thus creating more carbon emissions
- xix. support seeking additional funding for ongoing operational support for Community Recycling Centres beyond their current five-year contracts to enable continued service provision which has been instrumental in the success seen with the ongoing operation of the Raglan Resource Recovery Centre
- xx. advocates the need for one Resource Recovery Park to be established in the Franklin Local Board area to future proof services for forecasted large population growth in Drury, Pukekohe, Whitford, Beachlands, Clevedon and North Waikato areas.



### **Henderson-Massey Local Board**

That the Henderson-Massey Local Board:

- a) receive the National Emissions Reduction Plan discussion document to inform the council's draft submission report.
- b) support for the 'Equitable transition' ensuring that Tāmaki Makaurau Auckland undergoes a rapid, fair, and equitable transition to a low-emissions, regenerative and climate resilient economy will be critical to the economic resilience of Aotearoa as a whole.



# **Howick Local Board**

That the Howick Local Board:

- a) provides the following feedback on the National Emissions Reduction Plan document to inform the council's draft submission:
  - i. There seems to be high reliance on the private sector contributing to significant reductions in CO2 given that the chart demonstrates that this represents around 30% of emissions. The things that government, and also councils, need to consider are based on the assumption that vehicles will gradually transition into being electric powered or hydrogen powered (although that is to generate electricity for the vehicle anyway). The questions this raises are:
    - How long does the govt. intend to allow ICE vehicles to be continued to be imported if the push is to EVs?
    - Once registered on NZ's roads what is the expected, or permitted life span of those vehicles?
    - What is the Govt's intention regarding the existing EV fleet , both private and commercial, will there be a 'Use By' date for these?
    - What impacts will reductions in ICE fleets have on the economy generally, and the impacts financially of repair shops and parts suppliers, who have invested significant sums into their businesses?
    - What are the implications for business and industry in terms of transport and freight if ICE vehicles are phased out, will suitable commercial EVs be available to replace them and what will the cost of these be?
- b) How will the demand for increased electricity demand be met? New Zealanders have strongly opposed the damming up of more pristine rivers, and will continue to do so, the cost to the natural environment is too great. Do we want to build new coal fired power stations to meet demand? Obviously not, as these defeat the purpose of using EVs by increasing CO2 output into the atmosphere? Will existing and emerging non-polluting technologies for power generation be investigated e.g. wind farms, solar and tidal generated power? What will be the cost of this?
- c) What will be the environmental cost of the eventual dumping of EV vehicle batteries once they reach their 'end of life' cycle? Will these be able to be recycled or used in some other way instead of being dumped?
- d) With regards to the non-requirement for developers to provide off-street parking for new apartment and terraced housing buildings, how is it proposed to provide adequate charging facilities for EV batteries?
- e) The recreational boating sector also needs to be part of the consideration of reducing emissions.





# Māngere-Ōtāhuhu Local Board

- 1. **Support**: in principle the Ministry for the Environment's commitment to developing the first National Emissions Reduction Plan by end of May 2022.
- 2. **Strategy Links:** The local board highlights the following to develop Auckland Council's submission to the National Emissions Reduction Plan.
  - a. Supports Auckland Council's existing strategic direction in emissions reduction through Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan and agreed positions through previous submissions on climate change and transport emissions
  - b. The local board's Urban Ngahere 10-Year Action Plan (2021) is included to help mitigate emissions, build resilience longer term and enable adaptation to the impacts of climate change to meet council's climate goals
  - c. The local board's Local Board Plan 2020 aspirations and intent to reduce emissions are consider including:
    - Procuring investments for climate-friendly initiatives to help reduce emissions, promote awareness, and support better building and transport network design
    - ... build environments and communities that are resilient against the impacts of climate change, while each doing our part to reduce our own emissions and waste
    - Support Auckland's aspiration to be zero waste by 2040 and zero emissions by 2050, and
    - Support community capacity to help achieve zero waste, zero emissions and zero dumping
- 3. The local board request that the ERP highlights direct implementation and budgets to action the local board's local board plan noted above, including the local board's local recycling centre and Eco Park to support this regions emissions goals.
- 4. Economic: The local board acknowledges that fossil fuels have long dominated the global energy mix, innovation in renewable technologies is leading to changes in the production and consumption of energy. The expansion of the renewable energy is driven by advances in technology, falling costs, public policy, and regulatory support. In turn, this growth is generating economic opportunities, while also helping to mitigate the effects of climate change. The local board request that the ERB includes how will it be inclusive to the local board's communities where average household incomes are low, and emission reduction is far lower in priority for many local households, when compared to affordable accommodation and groceries.
- 5. Note: The region's living standards is rising on average, the challenge for this policy is to combine growth promoting policies with policies that allow the poor to participate fully in the opportunities unleashed and so contribute to that growth. This includes policies to make labour markets work better, remove gender, age and income inequalities, and increase financial inclusion.
- 6. Transport: the local board support the approach of the ERP and four transport targets
  - reduce vehicle kilometres travelled (VKT) by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities
  - increase zero-emissions vehicles to 30 per cent of the light fleet by 2035
  - reduce emissions from freight transport by 25 per cent by 2035
  - reduce the emissions intensity of transport fuel by 15 per cent by 2035.

7. Reduce petrol private car use that will take a variety of policies and programs that help to change drivers' behaviour and awareness of their environmental. For policies to be sustainable over time, it is crucial to not only change the infrastructure in which people live and travel, but also transform their perception of their traveling choices. This includes: carsharing, park-and-ride facilities, or other reward incentives like or electric bicycles and cars.

Mängere-Ötähuhu

Local Board

uckland

- 8. The local board also points out its position on congestion charging. That this is also factored into the board's ERP input. In summary, the local board
  - a. Note: disproportionate impact of congestion pricing on high-deprivation areas and vulnerable communities
  - b. Replace Regional Fuel Tax and not an additional charge
  - c. Free public transport and fairer fare structure
  - d. Invest to mitigate travel inequities for most vulnerable communities
  - e. Provide exemptions additional price-cap mechanisms must be put in place to curtail an excessive burden on the working people in areas of high-deprivation
  - f. Implement environmental actions to achieve outcomes in Auckland Council's Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan
  - g. Better engagement to be informed of details early and asks for comprehensive public engagement with key stakeholders, mana whenua and mataawaka.
- 9. **Diverse:** Request that the ERP is made more inclusive for all communities including the Mangere-Otahuhu local board area. By making the collateral and policy inclusive allowing diverse communities to participate in developing, implementing, and responding to emission reduction plans, to support the ERB connect to communities like Mangere-Otahuhu it provides the following:
  - Meaningful engagement methods that is inclusive of local languages and ethnic communication platforms
  - b. Partnering with local employers and market public transit with promotions, to use public transport, support cycle events or local initiatives such as local cycle tours, and helping to change peoples behaviour about using alternative transport instead of personal vehicles
  - c. Incentivise developers with central government rebates if they can provide real measures and evidence of emissions reduction in their projects, such as walkable distances to public transport, shopping areas, this rebate could also be increased if Accommodation affordability is included. This may motivate the building sector to have more interest in land use and policies that impact our environment including emissions
- 10. Coordination: Effective responses to emission reduction sometimes lacks focus on disparate action and lack of enforcement on larger companies. The local board requires the ERB includes multiple stakeholder coordination (e.g., media, government, business, agencies, individuals, etc.) to make responses organizational rather than individual.

The Mangere-Otahuhu Local Board would like to thank you for your consideration.



### **Manurewa Local Board**

### That the Manurewa Local Board:

- a) provide the following feedback to the Governing Body on the Government's Emissions Reduction Plan submission:
  - i. The board notes that Auckland Council already has existing strategic direction in emissions reduction through *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan* and that our board has previously supported the goals of this plan to reduce emissions by 50 per cent by 2030 and transition to net zero emissions by 2050.
  - ii. We note that Auckland Council's 2019 climate change risk assessment rated most coastal areas of Manurewa very high on the climate change impact index, representing exposure and sensitivity to climate change, while most of Manurewa was rated as having a very low capacity to adapt to climate change. Having both high impact risk and low capacity to adapt concentrated in same area means that addressing climate change is important for our board.

### Implementation and delivery of the emissions budgets

- iii. The board agrees that a partnership approach between central and local government will be needed to successfully deliver on emissions reduction targets and that upskilling, education, information, and awareness raising campaigns to promote behaviour change will be an important part of this.
- iv. It is also vital that a partnership approach is taken with Māori, and we support the suggestion that a Māori Advisory Group is created to ensure that a Te Ao Māori worldview is embedded in development of the emissions reduction plan.

### **Funding and finance**

v. The board agrees that significant funding from central Government will need to be made available to local authorities, businesses and individuals to support in the implementation and delivery of emissions budgets.

### Planning

vi. The board supports using urban design and planning tools to reduce vehicle kilometres travelled and car dependence in urban areas, and encourage the uptake of walking, cycling and public transport.

### **Behaviour change**

vii. The board supports the view that the best way to drive behaviour change is through faceto-face community engagement and empowering local champions.

### Moving to a circular economy

viii. The board supports measures to increase the circularity of the economy, reduce avoidable food waste and extend product stewardship schemes to a wider range of products. We would like to see a central and local government partner on resource recovery initiatives that support local employment and entrepreneurship.



### Transport

- ix. The board notes that, according to data from the 2018 Census, 87 per cent of Manurewa residents travel to work in a car, truck or van. Only six per cent use public transport for their commute, and around one per cent use active modes of transport. It is our view that a significant improvement to public transport infrastructure in Manurewa will be needed to change this pattern.
- x. We believe that improvements to the frequency and convenience of bus linkages to our three train stations (Te Mahia, Manurewa and Homai), and improved infrastructure such as bus shelters are needed. Infrastructure for active modes, such as separated cycle paths and shared paths, is also needed to link residents with transport hubs. We support trialling options such as ride share services or on-demand shuttles to address gaps in public transport in lower-density areas.
- xi. The board supports policy interventions to reduce congestion and encourage greater use of public transport and active transport modes. We support exploring tools such as congestion charging to achieve this, provided that the needs and interests of the most vulnerable members of the community and those who would be disproportionately impacted by such charging are safeguarded, and that the revenue is used to improve access to public transport.
- xii. We support the proposal to provide targeted support for low-income groups and transport disadvantaged, such as subsidies for low-emissions vehicles. We also support the suggestion of a vehicle scrappage scheme to help low-income groups swap from older vehicles to cleaner models.

#### **Building and construction**

xiii. The board supports measures to address the operational efficiency and thermal performance of buildings. These will allow us to ensure that our buildings are able to maintain a healthy temperature without contributing to climate change.

### Waste

- xiv. The board has provided separate feedback on the Government's proposals for a new waste strategy and associated waste legislation, and that feedback should be read in conjunction with this.
- xv. We believe that low-income communities such as ours will require initiatives and policy settings to support the behaviour change needed to make necessary reductions to household waste. Our community is already struggling to cope with changes that have been made to waste collections in recent years, and illegal dumping is a significant problem in our local board area.



# Maungakiekie-Tāmaki Local Board

That the Maungakiekie-Tāmaki Local Board:

- a) endorse in principle the National Emissions Reduction Plan to achieve national greenhouse emissions budget.
- endorse the proposals in the Emissions Reduction Plans Document to reduce and move towards a circular economy.
- c) note there is also an opportunity for Auckland Council and local boards to work collaboratively with communities, small businesses and private sector to engage them with the Emissions Reduction Plans, and explore innovative ways to achieve national greenhouse emission goals.



# **Ōrākei Local Board**

In May 2021, the Climate Change Commission gave the Government its recommendations for the first three emissions budgets and the policies needed to meet them. The combined effect over the three budget periods will reduce emissions with a target of net zero long-lived gases by 2050 and a 24-47% reduction in biogenic methane by 2050.

The Emissions Reduction Plan will set the direction for climate action through to 2035.

Although the target to achieve net zero emission in New Zealand will require action from all sectors of the economy, and encompasses fundamental changes in thinking about the way we live, work and produce goods, in the short term we believe the major impact for our local board area will be through the four transport targets:

- Reduce vehicle kilometres travelled (VKT) by cars and light vehicles by 20% by 2035 through
  providing better transport options
- Increase zero emissions vehicles to 30% of the light fleet by 2035.
- Reduce emissions from freight transport by 25% by 2035.
- Reduce the emissions intensity of transport fuel by 15% by 2035

The document states the scale of change to achieve these reductions and complete decarbonisation cannot be overstated. Almost every person and business relies on the transport system daily. Urgent, wholesale change is needed, major interventions will be required to reduce the trajectory if emissions continue unabated. These measures are likely to have a big impact on Auckland, as if the targets are to be met nationally, the urban centres which are more condensed and have better public transport options, will have to provide the bulk of the reduction in emissions. This could mean, for example, car journeys in Auckland may have to be reduced roughly by half the current number by 2035.

To do this, we will need to concentrate on building an electric vehicle fleet, provide viable public transport alternatives and concentrate on the investment in infrastructure to allow safe walking/cycling options.

Other opportunities include:

- Urban planning should provide an opportunity to make neighbourhoods less car centric, including low-traffic areas
- The road network must be maintained, especially as we seek to develop road based public transport solutions. Any re-allocation of road and street space for walking/cycling options must not come at the expense of public transport routes.
- Reducing the cost of public transport
- Congestion pricing
- Regulatory and by-law change will be required to enable councils to meet emission targets, for example, the ability to set tolls on key routes at key times to deter indiscriminate use of the private car.
- Completing the cycle network to provide safe journeys across the city.
- Provide subsidies for the purchase of low emission vehicles
- Decarbonise heavy transport and freight, however road transport freight should be distinguished from rail.





- Invest in light rail and mass transit corridors
- Advocacy to educate and inform the community. For example, there is a difference between systematic responses and behaviour responses, both are relevant and necessary to achieve emissions reductions.

The Orakei Local Board supports the targets listed above, provided the appropriate planning and investment for providing viable alternatives is forthcoming. Funding decisions are crucial along with information and education about how the policies will be implemented. The community needs clear direction about what is expected, when each measure will be put in place and what is required to achieve the emission targets.

The challenge will be in implementation along with the resilience to adapt and change the plan if requirements are either not being met or if it becomes clear more is needed.



# **Ötara-Papatoetoe Local Board**

- 1. The board welcomes the opportunity to provide feedback for inclusion in Auckland Council's submission on the to the National Emissions Reduction Plan (ERP).
- 2. The board received a copy of the council's draft submission draft submission on 12 November 2021.
- 3. The board agrees with the detailed comments in the draft noting that we are entering a period of unprecedented 'era scale' change. We cannot continue to live our lives as normal as we face a future of climatic and environmental disruption. We need to transition from our current economic settings, to a zero-carbon, sustainable and circular economy.
  - i. Projections show the world is likely to hit 1.5°C average global warming by 2030. Warming is already 1.2°C, and the most recent Intergovernmental Panel on Climate Change (IPCC) report shows that current climate models project (Coupled Model Intercomparison Projects CMIP6) on average a warming of 0.3°C for the decade to 2030. In September, the IPCC reported that global emissions will rise 16 per cent by 2030 on 2010 levels under governments' plans put forward since the start of 2020.

### Therefore, the government needs to be bolder and act faster.

- ii. The board supports higher targets, sooner:
  - 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035 increase target from 30% and sooner than 2035.
  - reduce emissions from freight transport by 25 per cent by 2035 increase target from 25% and sooner than 2035.
  - reduce the emissions intensity of transport fuel by 15 per cent by 2035 increase target from 14% and sooner than 2035.
  - setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030 – sooner than 2030.
  - reaches the progress indicator target of 60 per cent renewable energy by 2035 increase target from 60% and sooner than 2035.
  - setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050) sooner than 2025 and 2050 respectively.
  - reduce waste biogenic methane emissions by 40 per cent by 2035 increase target from 40% and sooner than 2035.
  - to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead sooner than 2030.
- iii. The board notes the draft council submission focusses on six areas. We provide our comments on each area below:

### a) Implementation and delivery of the emissions budgets

The board <u>agrees with the draft council submission</u> that the discussion document provides no clear mechanisms on how the proposals will be delivered. Reducing emissions and adapting to the impacts of climate change will require significant funding to local authorities, businesses and individuals.

### Ötara-Papatoetoe Local Board

### b) Equitable transition

- The discussion document sets out five principles, including a fair, equitable and
  inclusive transition. <u>The board is strongly supportive of ensuring the city, in particular
  those in South Auckland, undergo a rapid, fair, and equitable transition to a lowemissions, regenerative and climate resilient economy. Transition cannot be for those
  that can afford it, but is critical for the nation's economy if everyone transitions
  together.
  </u>
- The board notes the reference in the council's draft submission to a report by the Ministry of Transport on <u>transport equity</u> in Tamaki Makaurau Auckland. The report stated <u>low income as the most consistent factor affecting people's ability to afford</u> <u>transport to meet their needs</u>. This is supported by what board members see and hear from constituents.
- This board <u>has therefore advocated for free public transport</u> which is universally applied and does not target or favour those that can afford low emission vehicles through government subsidies. The board agrees with the draft council submission that a lower fare recovery ratio could help facilitate lower fares, increased service levels (frequency and hours of operation), improved coverage through the introduction of new routes in poorly served areas. In addition to many in our communities having less discretionary funds, many are also shift workers. <u>Until public transport is affordable and has increased service levels and coverage, our households will continue to be dependent on private vehicle use.</u>
- The board is also concerned about the slow and steady concentration of dirty petrol vehicles in low income areas like Otara-Papatoetoe.
- Looking further afield, with our large Pacific populations, our Pacific neighbours will become the dumping ground for Aotearoa New Zealand's unwanted petrol vehicles. The <u>introduction of a vehicle scrappage scheme</u> or similar is therefore essential to enable our families to swap dirty petrol vehicles for cleaner models.
- The board agrees with the draft council submission in answer to question 16, and supports the examples set out. The board notes the conclusion from a report that those on higher incomes tend to have higher carbon emissions, therefore <u>the</u> <u>government should not be seen to be targeting less affluent</u> Aucklanders as if they are the main drivers of emissions.
- Many of the residents of our board area are in sunset industries, therefore <u>transitioning to green jobs</u> is essential for our residents so as to not be left behind and increasing further inequalities. The board agrees with the draft council submission that there needs to be <u>free or subsidised training programmes for workers to re-skill</u> and re-deploy into sustainable industries.
- <u>Social procurement</u> also need to be employed to enable our marginalised groups to breakdown systemic bias inherent in mainstream systems and therefore be able to fully participate in a sustainable economy.
- The board agrees with the draft council submission response to question 74 in relation to the negative health impact that older, poor-quality buildings have on Māori and Pacific communities. The majority of the Ōtara-Papatoetoe Local Board population is of Māori and Pacific decent. <u>Improved performance of our buildings</u> is therefore essential for the health of our communities.
- Tamaki Makaurau Auckland is known as a super-diverse city. The board area is no different, with ethnicities from across the Asia and Pacific calling Ōtara-Papatoetoe

home. Pakeha New Zealanders are a minority. It is essential that <u>engaging and</u> <u>educating the public needs to be inclusive in order to get broad public buy in</u>. Recent experiences around COVID-19 show the risk and damage from the spread of misinformation and the vaccine that has rooted itself in our communities. The government should not let that happen with climate change.

 The board agrees with the draft council submission that co-developed localised transition plans are undertaken to ensure equitable transition for our communities.

### c) Legislative requirements

The board agrees with the draft council submission on this focus area. The inability
for the current resource management system to respond to poor environmental
outcomes due to increased urban development means the Resource Management
reforms are urgently needed and must be linked to the wider reforms the Government
is undertaking, including this discussion topic.

### d) Aligning systems and tools

- The board agrees with the draft council submission on this focus area, and alignment
  of government policy direction, with Auckland's growth, is crucial if we want quality
  compact urban form and more certainty around planning for infrastructure.
- The board agrees with the draft submission that climate adaptation should not be treated separately from climate mitigation, as both policies and actions are required now. Climate adaption is not a future action, as we are seeing the effects of climate change now.

### e) Iwi/Maori

- The board agrees with the draft council submission that a strategy developed by the Government and iwi/Māori to support Māori to take climate action, but that the Government must adequately resource Maori to mitigate the impacts of emissions budgets.
- The board continues to strengthen our working relationship with local Mana Whenua who has contributed to the development of our annual plans and future work programmes. The creation of a Maori Advisory Group, as recommended in the draft Council submission, is essential to guide and inform the central government.

### f) Future (foresight) approach

• The Ōtara-Papatoetoe Local Board agrees with the draft Council submission that a futures or foresight approach is recommended in developing an emissions plan. Life as we know it will need to drastically change if we are to meet our climate goals. Future approaches will help make better decisions now, for the future.



## **Papakura Local Board**

### That the Papakura Local Board:

- a) provide the following feedback to the Governing Body on the Government's Emissions Reduction Plan submission:
  - i. The board notes that Auckland Council already has existing strategic direction in emissions reduction through *Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan* and that our board has previously supported the goals of this plan to reduce emissions by 50 per cent by 2030 and transition to net zero emissions by 2050.
  - ii. The 2020 Papakura Local Board Plan incorporates advocacy and initiatives related to climate change related matters:
    - Advocacy for encouraging the use and decarbonisation of public transport to reduce vehicle emissions.
    - Advocacy for the provision of safe shared pedestrian / cycleways as alternative transport options to reduce vehicle emissions.
    - Advocacy for funding for coastal erosion. Coastal erosion is an issue in the Papakura Local Board area, particularly along the Karaka/Harbourside shoreline.
    - An initiative to implement the Urban Ngahere Project to address the loss of tree canopy due to intensification and growth in the area. The tree canopy in Papakura is sitting at 13 percent.
    - Water quality initiatives to restore the Papakura Stream and enhance the receiving environment in the Manukau Harbour.
    - Initiatives to reduce waste to land fill, including advocacy for a resource recovery centre in the south. Papakura was also one of the first areas for the kitchen waste collection to be implemented.
    - Advocacy for a strengthened product stewardship legislation to reduce the amount of plastic and polystyrene being used to packaging (see New Zealand Packaging Accord 2004).
    - ili. The board also advocates for:
      - more green spaces in future developments
      - the retention of green belts, reserves, esplanade reserves and regional parks
      - the retention of quality soils.

### Implementation and delivery of the emissions budgets

- iv. The board agrees that a partnership approach between central and local government will be needed to successfully deliver on emissions reduction targets and that upskilling, education, information, and awareness-raising campaigns to promote behaviour change will be an important part of this.
- v. The board supports taking a partnership approach with Māori, including the suggestion that a Māori Advisory Group is created to ensure that a Te Ao Māori worldview is embedded in development of the emissions reduction plan.



### Funding and finance

- vi. The board would like to see government funding to incentivise climate change projects as local government funding is very limited, particularly since the Covid-19 pandemic.
- vii. The board agrees that significant funding from central Government will need to be made available to local authorities, businesses and individuals to support in the implementation and delivery of emissions budgets.

### Planning

viii. The board supports using urban design and planning tools to reduce vehicle kilometres travelled and car dependence in urban areas, and encourage the uptake of walking, cycling and public transport.

### **Behaviour change**

ix. The board supports the view that the best way to drive behaviour change is through face-toface community engagement and empowering local champions.

### Moving to a circular economy

x. The board supports measures to increase the circularity of the economy, reduce avoidable food waste and extend product stewardship schemes to a wider range of products. We would like to see a central and local government partnership on resource recovery initiatives that support local employment and entrepreneurship.

### Transport

- xi. The board believes a significant shift in transport will need to be delivered at pace and scale to achieve needed reductions in transport emissions. For Papakura this will require significant upgrading of the local public transport network, including:
  - extending the cycle and active transport mode network within the Papakura area, in particular, providing safe off-road connections to the State Highway 1 cycleway
  - investing in more separated cycleways to encourage increased uptake of cycling, including separating the cycleway on Great South Road
  - providing more bus shelters as there is a deficit of these in south Auckland
  - addressing the affordability of fares to increase usage of public transport in lowincome communities
  - providing complimentary services to support the utilisation of public transport.
- xii. The board supports policy interventions to reduce congestion and encourage greater use of public transport and active transport modes. The board supports exploring tools such as congestion charging to achieve this, provided that the needs and interests of the most vulnerable members of the community and those who would be disproportionately impacted by such charging are safeguarded, and that the revenue is used to improve access to public transport.
- xiii. The board supports the proposal to provide targeted support for low-income groups and transport disadvantaged, such as subsidies for low-emissions vehicles. We also support the suggestion of a vehicle scrappage scheme to help low-income groups swap from older vehicles to cleaner models.



### **Building and construction**

xiv. The board supports measures to address the operational efficiency and thermal performance of buildings. These will allow us to ensure that our buildings are able to maintain a healthy temperature without contributing to climate change.

### Waste

- xv. The board is supportive of creating a circular, self-sustaining economy that will reduce waste emissions and cut biogenic methane emissions.
- xvi. The board has provided separate feedback on the Government's proposals for a new waste strategy and associated waste legislation, and that feedback should be read in conjunction with this feedback.



# Puketāpapa Local Board

### Relevance to the Puketāpapa Local Board

Local boards are responsible for decision-making on local issues, activities and services and providing input into regional strategies, policies and plans. Local boards also have a role in representing the views of their communities on issues of local importance.

The Puketāpapa Local Board is committed to <u>Becoming A Low Carbon Community</u>. As the second local board in Auckland to develop our own local low carbon plan, we understand that significant actions are required by people at every level to achieve our target of zero carbon by 2050.

Our <u>Healthy Puketāpapa Action Plan</u> also prioritises healthy and sustainable food choices for our communities.

Every three years local boards set their priorities and strategic direction through a local board plan. Many of the Puketāpapa Local Board Plan outcomes and objectives demonstrate this commitment. The full plan can be found here:

https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/localboards/all-local-boards/puketapapa-local-board/Documents/puketapapa-local-board-plan-2020english.pdf

In particular, the following aspirational outcomes and objectives capture some of our key focus areas toward transitioning to a low-emissions and climate resilient future:

#### Outcome 3: Our environment is protected and enhanced for present and future generations

- Improve the mauri of awa and the Manukau Harbour
- We all take care of waterways, parks and public spaces
- Our people live more environmentally friendly lifestyles

### Outcome 4: Well-planned neighbourhoods and vibrant public spaces

- · Neighbourhoods are well designed and interconnected with healthy affordable homes
- Provision of infrastructure that supports more housing and also protects the environment and responds to severe weather events

#### Outcome 5: Transport options that are reliable, accessible and less polluting

- A range of transport options that are less polluting
- Making getting around safer
- More walking, cycling and use of public transport

### Local board feedback:

The Puketāpapa Local Board is committed to taking climate action on many fronts, as reflected in our planning framework mentioned above.

Our Low-Carbon Action Plan, *Becoming a Low Carbon Community* and many of our other plans and initiatives align well with the early proposals for the first National Emissions Reduction Plan (the Plan).

Below are some of the ways our holistic localised actions in Puketāpapa are already contributing to the vision for a productive, sustainable and inclusive Aotearoa. We hope they paint a picture of the role local boards can play in "transitioning to a low-emissions and climate-resilient future" at a local community level, **inspiring continued innovation and support of local leadership and community action in the development of the Plan.** 

| Local actions contributing to the vision for 2050   |  |
|---|--|
| Economic activity is<br>nature-enhancing,<br>carbon neutral and<br>climate resilient  | • Supporting our local business association to deliver and promote low carbon activities as the first business association in Auckland with sustainability and low carbon as one of its key purposes.  |
| Energy and transport<br>systems are accessible,<br>affordable and<br>sustainable  | <ul> <li>Ongoing work on Puketāpapa Greenways network.</li> <li>Supporting and delivering bike repair and activation programmes for children and community members.</li> <li>Promoting and enabling localism, ie. being able to "work, live and play" in local neighbourhoods.</li> <li>Prioritising safety and network initiatives for active and public transport.</li> <li>Ongoing advocacy for viable low carbon transport options when needing to venture out of our local area.</li> </ul> |
| Production systems are<br>regenerative, providing<br>a way to innovate and<br>invest to meet future<br>challenges                         | • Our EcoNeighbourhood groups create varied innovative ways for<br>local people get involved in sustainability initiatives, e.g., planting a<br>locally-championed food forest for a high deprivation area in Molley<br>Green Reserve.   |
| Every household can<br>meet its material<br>needs, in turn reducing<br>child poverty  | • Our Healthy Puketāpapa Action Plan promotes access to drinking water and healthy food and housing that's sustainable for our local families.   |
| Te Tiriti partners work<br>together to realise<br>mutually beneficial<br>economic opportunities<br>and respective kaitiaki<br>obligations | • Our soon-to-be-finalised Integrated Area Plan has been developed in close partnership with mana whenua as a 30-year vision that guides and supports the development growth areas across parts of Puketāpapa and Albert-Eden Local Board areas.   |
| Our natural<br>environment is<br>thriving.  | <ul> <li>Supporting local volunteers to restore streams.</li> <li>Collaborating across local boards to promote the health of our waterbodies, including through the Manukau Harbour Forum.</li> <li>Working with mana whenua to restore Te Auaunga in a project with significant positive ecological and urban development outcomes.</li> </ul>  |
| Every New Zealander<br>has a safe, warm, dry<br>and affordable home.  | • Supporting Healthy Rentals programmes.   |

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In line with the above, the Puketāpapa Local Board:

- supports:
  - o the overall strategy.
  - o the vision for 2050: a productive, sustainable and inclusive economy where:
    - Economic activity is nature enhancing, carbon neutral and climate resilient.
    - Energy and transport systems are accessible, affordable and sustainable.
    - Production systems are regenerative, providing a way to innovate and invest to meet future challenges.
    - Every household can meet its material needs, in turn reducing child poverty.
    - Te Tiriti partners work together to realise mutually beneficial economic opportunities and respective kaitiaki obligations.
    - Our natural environment is thriving.
    - Every New Zealander has a safe, warm, dry and affordable home.
  - o the principles for the transition:
    - A fair, equitable and inclusive transition.
    - An evidence-based approach.
    - Environmental and social benefits beyond emissions reductions.
    - Upholding Te Tiriti o Waitangi.
    - A clear, ambitious and affordable path.
  - o meeting the net-zero challenge.
  - central and local government working closely with Te Tiriti partners on the Emissions Reduction Plan.
- requests:
  - funding for local boards of Auckland Council to develop and deliver community based local climate action plans and related activities.
  - o funding for local boards to implement urban ngahere strategies.
  - diverse communities are consulted and taken into consideration when developing the plan, particularly regarding awareness raising and implementation methods among culturally and linguistically diverse communities.
  - adequate resourcing for iwi and other Māori organisations to participate fully in developing and implementing emissions reduction plans.
  - support be provided to help businesses and community organisations develop and implement emission-reduction plans.
  - o further subsidies to encourage both solar power initiates in urban areas .
  - significant increase in central government funding directed to rapid transport infrastructure and other transport measures in Auckland to lift uptake e.g., light rail, electric micromobility facilities, and infrastructure for active transport, micro-mobility and Accessible Streets programmes.

 the Ministry of Transport and other organisations promote multi-modal transport e.g., through increasing secure bike parking at rapid transit stations and allowing bikes to be carried on buses.

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- additional support be targeted to groups and communities who may experience difficulties taking up mitigation and adaptation measures.
- investigation into making public transport free for community service card holders, tertiary students and under 25s.
- investigation into incentivising the transition from cars to public transport, ie. by subsidising public transport fares for a period after someone chooses to go car-free.



# **Rodney Local Board**

- 1. The Rodney Local Board welcomes the opportunity to provide feedback for inclusion in Auckland Council's submission on the to the National Emissions Reduction Plan (ERP).
- 2. At its meeting of 20 May 2020, the Rodney Local Board resolved (resolution number RD/2020/44) to delegate authority to the chairperson to approve and submit the local board's input into Auckland Council submissions on formal consultation from government departments, parliament, select committees and other councils.
- 3. The Rodney Local Board supports Auckland Council's submission on the National Emissions Reduction Plan and would like to highlight the following points:

### **Transport and infrastructure**

- a. The Rodney Local Board covers 46 per cent of the geographical area of Auckland. It is home to the largest landfill in New Zealand and many clean fills are in Rodney. As a result, heavy truck movements dominate our rural highways. The vehicle emissions from many of these trucks are visible and would fail vehicle emissions testing in Europe. The local board supports council's feedback that New Zealand is one of two OECD countries without a fleet efficiency standard, and as a result has one of the oldest and most polluting vehicle fleets in the OECD. The local Board supports vehicle emission testing being part of the WOF process for all vehicles and that allowable emissions should be in line with those of European countries.
- b. Expresses concern that large Government-funded infrastructure projects such as the Matakana Link Road, Warkworth, currently being constructed, includes off-road cycleways and walkways but no funded safe-cycling connectivity to the nearby Warkworth town centre - it is a cycleway to nowhere.
- c. Suggests that large infrastructure projects that are planned for delivery within the next decade that provide for safe walking and cycling within the development need to also include funding for safe walking and cycling connections to town centres and transport hubs.
- d. Suggests that to increase public transport patronage, free public transport within Auckland could be offered to residents in the weekend when passenger numbers are low.
- e. Requests that more detailed analysis of the amount of carbon emissions generated from areas in Rodney Local Board area where residents do not have access to regular public transport, so that this data can be used to analyse how best to reduce carbon emissions across Auckland as resources may be better spent providing additional public transport services as opposed to replacing the bus fleet with electric buses.
- f. Proposes that residents need to have the ability to work from home without commuting, however, this is not always possible as the internet connections in many areas of the Rodney Local Board area are slow and unreliable. Funding needs to be allocated by Government to address this issue.

#### **Greenfield development**

g. The Rodney Local Board shares council's concerns about the National Policy Statement on Urban Development requiring local authorities to be 'responsive' to private plan changes for

development in locations not previously anticipated. The local board suggests that councils should be able to decline private plan changes for greenfield developments in poorly connected rural locations where public transport services are not being funded or provided.

Rodney

- h. The Rodney Local Board supports council's feedback on out-of-sequence and unplanned greenfield development. In Rodney, there are examples of where this out-of-sequence greenfield development has resulted in congestion and unnecessary carbon emissions being generated such as in the Government's special housing area of the Huapai Triangle. The Huapai Triangle has the capacity for 1200 dwellings but no provision for public transport, and each new dwelling is contributing to the already congested State Highway 16 traffic and increasing carbon emissions as cars remain idle for an hour a time stuck in traffic between Kumeu and Brigham Creek Road. Another example is the Milldale development in Wainui that has the funding via a partnership between multiple entities to support the bulk housing infrastructure for 4000 dwellings in Milldale and an additional 5000 dwellings in the surrounding area. While there is a strategic unfunded public transport plan for Milldale for future decades there is no actual plan for the earlier stages of the development.
- i. The local board requests that for new greenfield developments it is clear at what stage public transport will be funded and available, i.e. after the first 500 houses or first 100?
- j. The Rodney Local Board suggests that in order to move away from car-centric commuting, greenfield developments need to have safe cycle lanes to transport hubs and these need to be funded and built in the early stages of the development and not at the end.
- k. For greenfield developments, new parks need to be landscaped and trees planted at the beginning of development as trees can take generations to establish.
- I. Large areas of greenfield land in Rodney have been earmarked in the Unitary Plan as future urban areas including areas identified as productive soils (e.g., Kumeu and Warkworth). As land is developed established trees and wetlands need to be protected.
- m. Suggests that to reduce carbon emissions, greenfield developments in Auckland need to include funding for public transport and safe cycling connections to transport hubs.
- Notes that within the Rodney Local Board area it is difficult to reduce carbon emissions when greenfield developments are being consented without any funding for public transport or safe cycling.

### Air quality

o. The Rodney Local Board suggests that New Zealand's air quality rules/guidelines are improved so that they are in line with the World Health Organisation (WHO) current Ambient Air Quality Guidelines (2005), including for short-term exposure to sulphur dioxide (SO2, 24-hour average). Council's proposal to insert the WHO guideline for 24-hr average SO2 into the Unitary Plan's Ambient Air Quality Targets (AAQT) was appealed by the Environment Court as part of the Unitary Plan decision making process in 2016.

### Waste

p. The Rodney Local Board supports the move to a circular economy to tackle waste, but this will require change and innovation in business, manufacturing, and consumer behaviour. These

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changes will require significant investment, however, even with the increase in a waste levy to \$60 per tonne, it is still too 'cheap' to dump waste into our landfills, and because it is relatively cheap there may not be the incentive for many industries to make the significant changes required for a circular economy. The Rodney Local Board suggests that an increase in the levy to \$140 per tonne would be an incentive for industry to reduce waste.

- q. Currently clean fills are exempt from the waste levy, but managed fills will be subject to \$10 per tonne. Unless the fill material is tested for contaminants it is difficult to ascertain if it is clean or managed fill. Both clean and managed fills have caused significant sedimentation in our waterways, and both are a waste stream and should be subject to the levy.
- r. Bottle depositary schemes need to be rolled out throughout New Zealand and the local board suggests that the successful Swedish model where reverse vending machines are in supermarkets and other retail outlets provides a framework of how this can be achieved.

### Low-lying areas

s. A key area of concern is the increasingly frequent inundation of low-lying areas, particularly in the Kumeu, Helensville and Kaukapakapa areas that regularly flood in wetter months. Coastal areas, such as Omaha and Point Wells, are vulnerable to extreme weather events. The future priority for Rodney is flood control work to better manage climate change-related weather events and to protect core infrastructure. There are concerns about the risk of slips and erosion from commercial forestry in exposed areas that are in the process of being harvested. The local board requests that council's planning must assume that one-in-a-hundred-year storms will occur much more frequently in future and suggests that council cannot be too well prepared for these eventualities.


## Waiheke Local Board

The Waiheke Local Board commends those who have drafted Auckland Council's submission on the National Emissions Reduction Plan discussion and supports the draft.

- 1. The single most significant oversight in the National Emissions Reduction Plan as it stands, and therefore council's draft submission, is that there is no compelling positive vision for Aotearoa New Zealand driving the total narrative. It remains embedded as a reaction to climate change, not as a visionary leadership document that will compel people to want to make changes in behaviour themselves, and also to approach changes in their working lives and their businesses, farms and forests because they see it's all doable and indeed will add value to their lives, their communities and to their financial well-being. The hearts and minds of New Zealanders must be captured, and the sooner the better.
- 2. Secondly, it does not demonstrate how things are changing now, and what the timeframes are to those changes that will reduce emissions by natural cycles. The question then is how to accelerate the cycle. An example of this is the current phasing out of the manufacture of combustion engines in vehicles and heavy machinery. Cars have a life cycle. Where are the estimates of when they will be phased out and how long the second-hand life cycle will be?

As vehicles move to being electric-powered, petrol stations will become redundant and only the strongest will survive longest. Accelerating lack of access to petrol and diesel will accelerate the move to electric-powered vehicles. These models are available now. That is part of our future scenario and a natural cycle of technological change that needs to be firmly understood by the public and championed by government in this document.

How affordable are electric vehicles now? For middle-income earners who can access capital, the economics are already starkly in favour of second-hand electric vehicles over those that are petrol-fuelled. Government's role here should be to urgently make the economics more widely understood, whilst also leading lower-to middle income earners towards ownership on an equitable basis. That is how the natural cycle of car ownership to obsolescence would be accelerated. That would lead to faster depreciation of fossil-fuelled vehicles, again accelerating the natural cycle.

- 3. What does transport even look like in ten years' time? Where is the logic laid out so we all understand the changes that are happening that will change transport modes and that should be influencing the design and investment of transport infrastructure now, and iteratively all the time? The global investment is known, as are the trends that will most likely eventuate. For instance, the future of automated travel, ride-shares and logistics-enabling rapid pick-up and drop-off on demand, and smaller vehicles including smaller public transport carriers, rapid transport modes, hybrid hydrogen ferries, and so on.
- 4. What other technologies are known to be in development now that will change lives and ways of working? These must lead our collective vision of the possible, and not be omitted from any plan that expects to drive behaviour change at the most fundamental level.



The Waiheke Local Board is currently finalising a community-generated draft Low Carbon Plan for its area. Our suggestions for further changes to the council's submission are drawn from that plan as well as the current Waiheke Local Board Plan, and from our work over many years to sequester more carbon (e.g. through wetland restoration) and to reduce emissions (e.g. endorsing the work of advocacy group Electric Island Waiheke, changing terms of reference in council waste services procurement) and by way of our MOU with Auckland Transport that secured Auckland's first fleet of electric buses.

Below are suggestions specific to our unique constituency and location. These are grouped according to some of the key headings used in the Auckland council submission document.

#### Implementation and delivery of the emissions budgets

• We agree with Auckland Council's recommendation that significant funding be made available to local authorities to support them with the task of reducing emissions and adapting to the impacts of climate change. Particularly in regard to supporting the "uptake of technology and infrastructure upgrades such as energy efficiency technologies, and electricity network upgrades" (p. 5). Being an island, we rely on power supply from Auckland, a service that is frequently interrupted by storms. Acknowledging projections for an increase in severe weather events, we advocate for funding to be made available for projects that increase resilience for island and other remote settlements. In Waiheke's case this would include our independence of energy supply, such as interlinked systems of microgrids/ solar farms on council land and buildings/ localised electric car charging infrastructure.

#### **Equitable transition**

- For a transition to low emission activities to be equitable and accessible we request provision for:
  - o low-cost loans to help people and small business to purchase electric vehicles
  - improving resilience of Waiheke energy supply through localised power initiatives (see microgrids and solar farm concept)

#### Legislative requirements

Noting what is stated in the Auckland Council submission (p. 5):

"Local authorities need to be able to prioritise actions which will enable delivery of the emissions budgets and any subsequent climate related policies, for example the National Adaptation Plan which will be developed in 2022.

There needs to be strong legal weighting for the proposed targets and actions for them to be prioritised in planning decisions that seek low emissions outcomes. This means that Resource Management reforms need to include legislative links to the Climate Response (Zero Carbon Amendment) Act. The Resource Management reforms are needed due to the inability of the current system to respond quickly to urban development pressures, and respond to climate change and poor environmental outcomes, particularly freshwater quality and diminishing biodiversity."

 There needs to be a more joined-up approach between the government's housing and climate change reforms. For example, there is no provision in the Resource Management Enabling



Housing Supply Amendment Bill for the non-emitting disposal of construction waste created by removing existing structures from urban residential sites. The removal of existing homes and structures would be required to make way for the proposed three buildings of up to three storeys recommended under the Medium Density Residential Standards. These displaced homes could themselves provide a valuable resource to assist in addressing the acute shortage of housing in Auckland.

Another key area to address is the preservation of urban forests and plantings. Except for the
protections still in place in the Hauraki Gulf Islands District Plan, there are very few protections
in place for native and non-native vegetation in the Auckland region. The Auckland Unitary Plan
requires new rules to impose equivalent mitigations for the removal of carbon-sequesting
vegetation from development sites.

#### Aligning systems and tools

We endorse Auckland council's position that "alignment is important [...] between climate
mitigation and climate adaptation policies and actions" (p. 6). As a board, we strive to consider
mitigation and adaptation together so that success in these areas embodies wide outcomes
including social, economic and environmental gains. With this in mind, we advocate for stable,
ongoing financial and technical government support for local planting and community initiatives
such as the Love our Wetlands programme. Such restoration projects combine mitigation in the
form of carbon sequestration and increased biodiversity, while supporting adaptation in the
form of a localised job market which in turn reduces requirements for Waiheke constituent to
travel for employment.

#### lwi/Māori

- The Waiheke Local Board supports funding for sustained local Māori engagement with environment projects and to support wider uptake and competencies when implementing a Te Ao Māori world view in this area. A Waiheke-based example is the need for specialised support for engaging mana whenua/ matawaaka with the draft Biodiversity Strategy developed by local conservation network Waiheke Collective, in conjunction with the Auckland Council Biodiversity Department.
- Significantly more government funding is required to restore ngahere (forest) and tangaroa (coastal marine areas) to protect the rohe from the effects of climate change and to establish a sustained and growing carbon sink in Tikapa Moana in partnership with mana whenua, tangata whenua groups and the Department of Conservation.
- The board strongly supports the development of the regional co-design kaitiakitanga and stewardship framework and mana whenua climate office think-tank and related monitoring.

#### Futures (foresight) approach

• The Waiheke Local Board supports a "Futures Approach" to help design robust plans, strategies and policies, recognising that there are a range of possible futures that can be shaped by the decisions we make today" (p. 7). The board's Local Carbon Action Plan (WILCAP) aligns with this approach. With reference to ERP recommendations to actively engage communities to reduce emissions, the board has funded a localised activator role with multi-year funding, along with a part-time engagement advisor to work alongside the activator.



- We support Auckland Council's assertion that "to meet the emissions budgets and our regional and national climate goals will require fundamental changes to our society where everything will need to be done differently – where we live, how and where work happens, how people travel" (p. 7). Accordingly, we propose wider legislative and financial support for electrifying and/or hybridising ferry fleets. Our primary source of transport to and from the island is longer haul than intra-harbour routes and investment is required to move from diesel combustion, as well as investing in on-island recharging capacity. Also larger electric bus fleets which represent our primary public transport on island, implementing dedicated cycle lanes over the island, reducing helicopter travel and supporting electrification of planes.
- Further to the above point, we recognise that any emissions reduction targets should include provisions for how food is supplied. Therefore, we propose actions such as local gardens on council land that promote small intensive farming which in turn supplies local markets and reduces food miles.

Thank you for the opportunity of providing input on this critical issue.



## Waitematā Local Board

The Waitemata local board provides the following feedback:

- 1. The local board wishes to reiterate its feedback on the
  - Climate Change Commission's draft advice to Government as resolved at its business meeting on 16 March 2021 (Resolution number WTM/2021/43) – feedback attached as attachment A
  - The local board feedback Feedback on Hikina te Kohupara Kia mauri ora ai te iwi. Transport Emissions Pathways to Net Zero by 2050 discussion document, resolved at its business meeting on 15 June 2021 (Resolution number WTM/2021/137)
- 2. Urge stronger measures to reduce methane emissions, including of biogenic methane, and of carbon dioxide in order to achieve both our original Paris agreement commitments and the recent commitments we have made in that regard at COP26.
- 3. Among other measures, agriculture should be brought into the Emissions Trading Scheme as quickly as possible. One of the things New Zealand prides itself on is our ability to produce meat, dairy and horticultural products without the Government subsidies often provided by other Governments. However, given that all sectors in New Zealand are part of the ETS EXCEPT agriculture, New Zealand is essentially subsidising this sector in this respect. We need planning rules and incentives for transforming to regenerative agriculture and horticulture and for the creation and development of regenerative farms throughout our urban areas.
- 4. Stress the importance of practical measures to achieve an equitable transition as many necessary or desirable emissions reductions measures will hit those with less wealth and income hardest unless mitigated. An example is the necessity to enhance public transport provision, preferably by non-emitting vehicles to such higher deprivation suburbs and towns together with active measures to generate towns and suburbs that provide local jobs, education and recreation without the need for extensive travel. We need to take actions that achieve a fair, rapid, effective and equitable transition to a regenerative, low emissions and climate resilient society and economy.
- 5. We are not supportive of the initial emissions budget increase of only 0.7% above what is recommended by the Climate Change Commission. Bigger budgets sand more action are needed for Aotearoa / New Zealand to achieve its commitments. One of the reasons the world is doing so poorly at tackling climate change is that we keep delaying action. Although it is encouraging to see that budgets go further than what is recommended by the CCC in later years, this initial budget increase represents a further delay in taking action. We need early investment in widespread boiler conversion, energy efficient technologies, electricity network upgrades and conversion to renewable zero-emitting energy sources.
- 6. Kiwisaver is New Zealand's primary source of private savings for retirement. We support strong climate-based rules around how Kiwisaver providers invest money on individual's behalf. This is particularly true for default providers. One option would be to only allow a scheme to become a default provider if it meets certain climate-based criteria. Another option is to reward the most climate friendly schemes in a given year with a greater share of the default provider opt-ins by individuals in the following year.
- 7. Nowhere near enough is being done to reduce emissions from the construction, demolition and continuing use of buildings. Auckland's strategic targets in this regard need to be adopted nationally. Much more encouragement and practical support needs to be done for green walls and



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- 8. Much more should be done to reduce transport emissions. Once again Auckland's standards need to be adopted nationally. Rapid moves to electric, hydrogen and other non-emitting vehicles are required as well as to active transport including through cycle and micromobility paths and lanes. We can no longer afford to allow unplanned growth at the limits of and outside urban limits. Reasons of transport emissions, loss of quality soils and quality of life require this.
- Fundamental changes are needed to how and where we live, work and play, how our food is grown and supplied and our engagement and partnerships with Māori. Our grandchildren will never forgive us if we are too timid.
- 10. The positive future imagined on pages 5 and 6 is one that might have been possible if action had been taken twenty, thirty, forty years ago but emissions have risen since then, various tipping points have been passed and it now seems quite likely that there will be some form of societal collapse. The description mentions electric cars three times. This suggests that the future laid out in the plan will be a slightly modified tweaked business as usual. Is this possible or even desirable? The Ministry of Transport has modelled how to reduce emissions and acknowledge the need to remove many vehicle journeys altogether. We strongly recommend a rigorous approach taken in *all* areas of the economy to reduce emissions, mitigate the impact of changes already locked in and to prepare, with communities for change. We are already feeling the impacts of sea level rise on homes, and different growing conditions on our vegetables. We see it in the Pohutukawa flowering in early November. The government's leadership is required but there has been some excellent work done in the regions. This document is one step, but perhaps not the first.
- 11. The WLB supports the council submission and urge support for Auckland's Climate Plan, including the goal to reduce emissions by 50% by 2030.
- 12. We support nature-based solutions outside and inside of cities. Enough is known about the benefits of this approach means changes can start now.

In regard to specific feedback questions:

Question one:

13. We support the principles behind the plan but caution against perfection being the enemy of the good particularly the principle at the end to evolve the time over time as new options become available. Being effective and timely, while being responsive to support and empower people through change and shocks, are perhaps most important of all.

#### Question two:

14. With regard to removing barriers, we would recommend not subsidising fossil fuels in any way, nor polluting industries in any way. Adding barriers, like taxation, rationing, to pollutants, will in effect remove barriers to doing things in a more environmentally friendly way. A level playing field with regard pollutants would be helpful. Cheap loans to transition to a regenerative model would help, for example with permaculture.



#### Question four/five

- 15. We should maybe be questioning the wisdom of a growth agenda at all, at least one based on extraction, consumption and population growth. Traditional economic policy would do nothing to prevent the possibility of the extinction of the human race. A regenerative focus is needed. This might mean expanding wilderness areas, encouraging regenerative farming, and other blue/green nature-based solutions and to develop the practical skills of the community, particularly the younger generation to deal with the challenges ahead.
- 16. It may be more helpful to consider this crisis more like a war, or an emergency response, in which we have to consider our goal (to survive as a group without total societal breakdown<sup>1</sup>) and use our resources and manpower as strategically as we can to meet this goal? It might mean encouraging more people to share the homes we already have that are currently uninhabited or under-inhabited. In this framing, a falling population might be helpful to ensure resources and quality of life in the future. Being prepared for reducing populations is as important as preparing for growth. This might be building houses and infrastructure in such a way as to allow them to be easily deconstructed.

#### Question five

- 17. The government recognises that the emissions budget in itself is not enough to meet NZ's targets and that success depends on the voluntary efforts of the private sector. We do not recommend continuing a voluntary scheme mindset. This has been in place for twenty years and NZ's emissions continue to rise. We would recommend stronger guidelines across the economy that both incentivises transition, and cushions the social impact of it. Low emissions actions and business models must be demanded, not just encouraged. This plan must have teeth. Its effectiveness will buy it support and encourage early movers. This climate emergency needs to be treated as the emergency it is.
- 18. It is hard to know what exactly is a "low-emissions sector" as often it is not the sector that is the issue, but how the business is run. Agriculture can be positive or negative. Construction is generally high emitting, but living buildings are regenerative. Throw-away fashion is a problem, buying quality or second-hand pieces is positive, reducing waste. Domestic tourism is sustainable in a way international tourism might not be. The focus should be on all industries, and companies, becoming carbon positive and bring obliged to set out a road to zero, that incorporates halving emissions by 2030.
- 19. We recommend that financial incentives and more levers pulled to reduce emissions are done at a sufficient level to be effective. This might include carbon tax and fee; or individual carbon rations.

#### Question six:

- 20. Increasing intensification or indeed any construction puts more pressure on natural systems, particularly in the intertidal areas. Research gathered by the Hauraki Gulf Forum suggests that changes in land use is one of the greatest challenges to the health of the harbour. Silt has led to mass-mortality of shellfish. Greater enforcement powers, and greater resourcing of enforcement is necessary to disincentivise poor practices.
- 21. Communities need to be supported to connect, recreate and play a role in their own survival. In cities this needs community spaces: community halls and kitchens, libraries, well-supported marae and so on. With Covid budgets demanding cuts there is enormous pressure to sell or reduce investment in these assets and organisations. Council cannot create money, government can.

<sup>&</sup>lt;sup>1</sup> Kelton, S. The Deficit Economy



Aucklanders may be asset rich, but this is tied up in housing costs and they have long had less disposable income than in other areas of the country. Community places are where we build networks, share ideas, start projects and build our own resilience. The risk is that our budgets are all tied into transport and water infrastructure projects. These are essential but social infrastructure is necessary too that is easy to access across the city.

#### Question seven:

22. Urban intensification needs to be done in such a way so as to ensure that homes are light, private, warm, dry and well designed. We need to use our planning competence to ensure that even as we increase the number of homes there is sufficient green space for trees, for recreation, and for food growing (in allotments perhaps as in the UK). The urban canopy mitigates the heat island effect and supports bird and pollinator corridors. The loss of these would more greatly threaten biodiversity and reduce opportunities for young people to connect with nature. Research suggests that this connection is good for their wellbeing and leads to a lifelong appreciation of and desire to protect the natural world. We would want to encourage this.

#### Question thirteen:

23. agree with the objectives for an equitable transitions strategy

Question fourteen:

24. propose it apply to workers of all sectors.

Question fifteen:

- 25. a flexible approach that responds to the potentiality and interests of each individual and the job openings available may be even better than trying to cater for different groups.
- Question sixteen:
- 26. mandating high standards in new or renovated housing so that energy bills are kept low, for example cross-ventilation, sunlight, insulation, passive house principles, would be helpful.
- 27. Free cooking classes in school, or at a community level that excite and inspire healthy home cooking may also help reduce food waste. These skills are variable and not always taught at home even in middle class households.
- 28. Rationing of items per person should be considered. This might reduce fuel usage, and the eating of meat but will not raise prices for those living modestly. For those wanting to live extravagantly rations would have to be purchased from someone else.
- 29. Friendly family planning support should be easily and discreetly available in all communities and discussed at school for all students.
- 30. A just transition has been called for by the unions of those in the fossil fuel industry. A just transition is necessary for *all* workers and businesses as it is difficult to know how things will play out. We support the suggestion to develop an unemployment scheme to help workers get back into employment through training and job-finding help. This may well help both employees and employers to adapt to changing markets and opportunities. Workers also need decent financial support at the end of employment, at a level similar to the wage subsidy scheme. Other options might be a job guarantee (at a living wage) working in projects managed at a local/ regional level (as recommended by economist Stephanie Kelton) or a universal basic income.



#### Question eighteen:

31. It would be really helpful to encourage community deliberation – perhaps through deliberative democracy or citizen's assemblies – to work out the issues and priorities of people in a local area and to discuss their feelings about the situation, their options, their capacity and the capacity of government to support them, with a view to shaping a response so as to best enable these priorities. Expert advice, tools and information should be available to draw upon – as well as independent facilitators. This is placemaking then but with higher stakes. We would posit that a genuinely empowered community with multiple social connections would make good progress in transitioning places. People care very much about the place they live in and the people they know.

#### Question twenty-four

32. for members of the community, it is very easy to choose to put their investments into ethical investments that do not back fossil fuel, tobacco, alcohol etc. However, it is harder to find funds that focus on regenerative industries, like living buildings, and regenerative agriculture. If kiwisaver could directly fund the transition of businesses and councils to become zero-emission through low-cost loans – with suitably robust and independent reporting - then this might be helpful in accelerating transition. Councils generally stay within certain debt limits to keep repayment costs affordable. If government were to back more investment in this area then it might enable more work to happen more quickly.

#### Question twenty-six

33. The government may wish to consider that one of its greatest "exports" is its people. America taxes their expatriates. Should New Zealand follow a similar system in return for ongoing rights around welfare, retraining, education, health support, the right to own land or homes in NZ and superannuation?

#### Question twenty-seven

34. We would also note that transitioning to a low carbon economy also means investing in other things that improve quality of life but have lower emissions – this would include education, public health systems, environmental work, enforcement of compliance (agriculture and construction) and support for the arts and cultural practices (including theatre, film, video games, music and design) and the tec economy.

#### Questions twenty-eight to thirty-two

35. the modelling is based on reducing emissions through ETS trading; however, it is unclear how much forest needs to be planted and kept to ensure safeguarding our biodiversity long-term. Nor does this system impact on how consumers make decisions. A carbon ration would enable consumers to choose how and where they emit. For example, they may choose to eat meat and make up for it by walking everywhere. Such a system would be fair, effective and responsive to community choices and priorities. A carbon ration might create a competitive market for low-emission goods that people can buy more of. This could be achieved if all goods reported their embodied carbon that would have to be paid for through one's individual carbon ration, using a carbon card, that is automatically loaded up every week. A sinking lid approach would move people towards carbon zero over time.



#### Question thirty-three

36. Auckland Council has already done significant work assessing its own emissions profile and have developed a current plan and we ask for government's help in supporting us to meet our C40 obligations.

#### Question thirty-four

- 37. Enabling council to plan its growth within existing urban limits rather than demanding sprawl is enabled would be helpful as would be radically amending the Resource Management (Enabling Housing Supply) Amendment Bill to ensure that intensification is done well. We do not recommend prioritising private electric vehicles but making it easier for local authorities to stop traffic, lower traffic speeds, and keep traffic away from residential areas by decoupling parking from homes.
- 38. Another good approach, which could be used in harmony for the above, is to take a child-friendly lens to planning, as research has shown that doing so results in good environmental, economic and cultural outcomes (that benefit all ages)<sup>2</sup>. If all children went to school by active transport this would be a huge boon for all members of the family. We recommend considering Ghent's prioritisation of children and youth in planning, as exemplified by the Rode Loper (red carpet)<sup>3</sup> –
- 39. Transport emissions might be designed out through urban planning. We should consider how people might continue to work from home. An increasing number of apartment buildings (and high streets) are including shared workspaces. It may be that in the future, our needs to travel may be significantly curtailed if we live in mixed use quality compact neighbourhoods with work, education, shopping, and recreational opportunities in walking distance. These areas are likely to be more expensive. To be equitable, lower income areas may need subsidised public transport to ensure everyone can access opportunities.
- 40.A focus on private electric cars is risky. The embodied carbon in any vehicle is high. In addition, the opportunity cost of not encouraging more walking and micro-mobility.
- 41. High emitting refrigerants are considerably more harmful to the climate than anything else and they must be eliminated from the supply chain as quickly as possible, not just reduced. The phasedown of hydrofluorocarbons should not be extended. As with cars, there might be a campaign to collect old refrigerators, with discounts given to buy new ones built more safely. Old ones should be dismantled, and elements disposed of safely by trained workers.

#### Attachments

- a) Waitemata Local Board Feedback on Climate Change Commission's draft advice to Government
- b) Feedback on Hikina te Kohupara Kia mauri ora ai te iwi. Transport Emissions: Pathways to Net Zero by 2050 discussion document

<sup>&</sup>lt;sup>2</sup> Montgomery, C. 2013. Happy City; Gill, T. (2020). Urban Playground

<sup>&</sup>lt;sup>3</sup> https://rethinkingchildhood.com/2018/04/03/ghent-serious-child-friendly-urban-planning/



#### Attachment A: Waitematā Local Board feedback on Auckland Council's draft submission on the Climate Change Commission's draft advice

#### Introduction

1. The Waitemata Local Board believes that addressing climate heating issues is vital in all aspects of our activities and lives. Everything we do must work towards reducing our carbon emissions.

2. The Waitematā Local Board Plan 2020 has effective climate actions imbued throughout all six outcome areas. The board has also adopted Waitematā's Low Carbon Communities Action Plan which identifies opportunities to respond to climate change through joint community efforts and increasing our urban forest.

3. The Waitemată Local Board is generally supportive of the proposals within the Draft Adviceand have provided additional points below for consideration.

4. It is important for us to invest in education and behaviour change, however ultimately systems need to change rather than individuals. We need to make a low carbon lifestyle the easy option, by building systems and infrastructure that make low carbon choices easy and natural.

#### Feedback on Sector-by-Sector Recommendations

#### Urban Form

5. Urban form is key to meeting our transport targets, as city design can encourage or discourage lowcarbon transport modes, as well as influence travel distances.

6. Construction is resource intensive. It is essential then that we are building what people need in places that are practicable to build, safe from sea level rise and flooding and close to the amenities they need, including active and public transport. It is also prudent to build in such a way that elements last but can be reconfigured so as to meet the needs of future citizens.

7. We need to look after our existing housing stock and to encourage and incentivise the improvement of existing buildings with regard to insulation and energy efficient heating systems, and improved resilience to climate change through water tanks (for example). There may be opportunities to improve the building code to ensure that all new housing built is of a good standard and includes crossventilation. Good acoustic design is essential for high-density living.

8. We support energy standards for homes, and encouraging a life cycle approach, a modular building system that enables dismantling, repair and resourcing will mean fewer resources used and therefore likely less carbon.

9. The NPS UD facilitates more density and good quality urban form will help lock in low carbon lifestyles, though we are concerned about a disconnect between the Climate Commission report and the imperatives for council to go out.

10. Further to point 25 of the draft submission on the misalignment in policy direction that has enabled unplanned growth challenges, we urge that the replacement legislation for the Resource Management Act and other legislation must be carefully considered so as not to allow or contribute to this problem. We need to ensure we reach a net reduction in emissions while accounting for any future population growth



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12. One of the barriers to a compact urban form is that it is perceived as full of hard, concrete surfaces with little greenery. This encourages people to head towards leafier suburbs further out, which locks in car use. Standards should be set in every city to include sufficient welldistributed green space and natural features including parklands, gardens, play spaces and street trees throughout the city, to allow for a more compact but desirably urban form. A 3–5-minute maximum walk to open green space is generally desired.[1] Consistent feedback from constituents in the city centre is a desire to protect the trees and green spaces we have and to expand the amount of green space in the public realm.

#### Transport

13. The report says we need to move freight onto rail and shipping. We completely agree.

14. The report says: "Electric Vehicles are Key." We believe this will form part of the solution, however we believe mode shift to be more important. EVs are currently reliant on heavy metal extraction for their batteries. This is problematic because:

- The working conditions of the workers are poor.
- The extraction process comes with huge associated carbon emissions
- As the demand for these metals increases, easy-to-access deposits are used up, meaning that further extraction is likely to have even larger carbon emissions, meaning that every EV we import has a larger carbon footprint than the previous one.
- The demand for increased range of EVs places further demand on the battery requirements, leading to further increases in the carbon emissions of battery production
- We won't have our desired uptake in active modes and public transport if we continue to design cities for cars, even if they are electric cars.

15. We need to prioritise mode shift in our investment and KPIs. We need a large, immediate investment in protected, interconnected and extensive cycleways and in streetscaping and in better maintained footpaths and walkways, to get more people walking and cycling.

16. Planning and City design is crucial to improving uptake of Public Transport and active transport modes.

- a. We need a huge reduction in Urban Sprawl, with only land that has great public transport connections and physical and social infrastructure made available for housing. This is to keep cities compact and reduce the need for excessive infrastructure and private vehicle use, minimising emissions and energy use.
- b. To this end, we need to change our rules around housing. This should include:



 Restrictions around empty/unlived in properties.
 Policy changes to make property a less attractive investment option, to reduce public pressure on opening new land up for housing development.

17. As well as providing great non-car transport alternatives, we also need to provide incentives to get people to shift from the status quo. This could include (examples only):

- a. A sinking cap on carpark numbers or a substantial levy on them, as happens in Perth.
- b. Workplace or city-level (Council led) incentives for using active transport
- c. Slower road speeds
- d. Pedestrian, micro-mobility vehicle and cycle-favoured traffic design
- e. Road usage taxes for petrol and diesel vehicles (accounting for equity issues)
- f. Permits for vehicle use (accounting for equity issues)
- g. Binding KPIs around active mode use for Auckland Transport, other region's equivalents and NZTA.

18. Switching our freight transport fleet to use biofuels and hydrogen can help, but we cannot rely on it to sufficiently reduce emissions. Instead, we need to focus on shifting our freight to rail and shipping. The use of rail would also greatly reduce our road maintenance costs, without a corresponding increase in rail maintenance.

19. We need to address New Zealand's reliance on air travel for domestic travel. We need to move people onto rail for intercity journeys. This needs to be a fast, convenient, comfortable and affordable alternative to domestic flights.

20. International travel is not currently within our emissions reduction target, or within the emissions reduction for other countries. This needs to be reviewed and included in reduction targets.

#### **Behaviour change**

21. Behaviour change is great and necessary, but it is our job to make that change easy. Education alone is not enough and using guilt to encourage compliance is counterproductive. Instead, we need to make the desired behaviour easy and natural, by setting up systems that enable that behaviour. The onus on behavioural change is on changing systems, not on changing individual behaviour within the current system where low-carbon behaviours require more effort than carbon intensive behaviours.

22. Financial nudges can shift behaviour. Aligning economic wins with environmental and social wins may encourage people to make low carbon choices.

#### Education

23. We support point 39 of council's draft submission of the critical role that education and training play in Aotearoa's transition to a low emissions economy. A powerful educational approach is to model low carbon lifestyles in practice. We recommend that school buildings be zero carbon, or carbon positive, that gardens and kitchens offer garden-to-plate learning and that food waste is minimised and composted where possible. Free nutritional school meals could improve educational outcomes, reduce



waste, and set up good lifelong eating habits that will improve health and wellbeing. These shifts would have to be led by the Ministry of Education and would create more jobs.

24. Western Springs College is an exemplar of a climate change resilient building. Educating children in such environments, particularly where there are also organic gardens and biodiverse plantings normalises low carbon lifestyles. Ensuring that kids can get to school by active transport or public transport and discouraging them being dropped off by car has a positive short-term impact (on roads and communities) and long term one with regards to transport habits. School renewals and planning for new schools could help move towards enviro schools being the norm. Where schools are located is key in this. If schools have these facilities this might help them play their civil defence role as emergency hubs during extreme events.

#### Mãori outcomes

25. We support enabling Māori to lead and partner with the Crown in meeting the recommendations of the Draft Advice.

#### Central and local government working in partnership

26. We recommend considering the idea that all local councils, businesses, government agencies and organisations (including schools) should develop plans to reduce their carbon emissions and to mitigate climate change effects. These plans should be publicly available, audited and could play a role in procurement decisions.

#### Heat, Industry and Power

27. The report says we should end our use of coal. We agree.

28. We also need to have targets for reducing our use of natural gas.

29. We need to continue to strengthen requirements around insulation, glazing and design in our new and existing housing stock.

30. We need to provide advice and incentives to greatly expand the use of solar power, particularly at the household and enterprise level, and allow them to feed excess electricity into the grid. Solar panels can also provide local resilience and during storm events and power outages.

31. We need to explore geo-thermal district heating, and work with relevant councils to develop their district heating potential. This sort of investment would be likely to pay for itself in time.

32. Large scale composting could also be investigated as an alternative to, or to sit alongside with, large scale biogas production from food waste.

33. The report says we need an equitable transition strategy for jobs and impacted individuals. We think this is essential. We need free or subsidised training programmes to communicate skills and knowledge to move enterprises and workers into sustainable industries.

#### Land

34. The report says farming needs to be made more efficient. We believe the report does NOT go far enough here. We need to systematically reduce the amount of meat and dairy farming. We need to incentivise and assist farmers to transition away from meat and dairy.



This could be via schemes such as (examples only):

- A fifteen-year guaranteed subsidy on alternative crops/products
- Grants to cover transition costs, e.g. for the purchase of new equipment/machines
- Education about markets for alternative products and how to access those markets
- · Subsidised training for sustainable and regenerative agriculture and horticulture
- · Financial incentives to move towards regenerative farming

We strongly support regulating for, incentivising and enabling regenerative agricultural practices. A rapid reduction in stock numbers is required as part of a major change to low emissions and low waste agricultural practices. This change needs to include enabling and resourcing urban horticultural farms within urban areas. This reduces carbon emissions from transporting food as well as providing food security particularly including at times of natural disasters and pandemics.

#### Food security

36. The Auckland Region has large areas of market gardening that could be transitioned into using regenerative methods to increase yields, improve nutrition and draw down carbon.

37. We would recommend cattle and dairy farming methods need to also transition into regenerative agriculture system that does not rely on imported feed and in which circular waste systems are adopted.

38. Reducing food waste was identified by Paul Hawken in Drawdown as the third most impactful thing to do to reduce carbon emissions. Composting food waste will reduce greenhouse gasses and provide the resource for regenerative agriculture to function successfully. Facilitating a food waste collection to create this compost to serve market gardens in the regions then is highly recommended following the San Francisco model.

39. Incentivising the restoration of the seabed, preventing soil and sediment run off, and encouraging kelp would also have the effect of drawing down carbon and improving food security.

#### Forestry

40. We support point 222 of the draft submission and Auckland Council's advocacy to central government on the need to address the current lack of tree protection and add that an urgent amendment to the RMA is required to restore the ability of Councils to protect trees through simpler and more comprehensive measures than scheduling trees.

41. We support point 87 of the draft submission with the approach to build a long-term carbon sink to offset residual long-lived gas emissions through growing new native forests on relatively less productive land and add that where land is productive we recommend regenerative agriculture to improve soils to sequester carbon themselves.

42. We recommend research is undertaken to establish how climate change will impact biodiversity in the context of Aotearoa.



#### Waste

43. The report recommends improved Product Stewardship. We wholeheartedly agree with this. We need to look at product lifecycles and making businesses responsible for the waste their products generate. This could include:

- A levy on bottles and other products that can be reused or recycled.
- Reducing waste by design
- Enabling households and enterprises to compost
- Subsidising large scale composting
- Designing products and buildings that minimise waste and are long lasting

44. Sustainability plans seem to have a significant impact on outcomes. The CRL project is not yet complete but has diverted the great majority of waste from landfill sites Emissions Budget

45. The report states that with its proposed changes, we will achieve a 30% reduction on our 2005 emissions levels by 2030, but that in order to do our share internationally, we need to achieve a 35% reduction. The report proposes we do this through offshore mitigation. We disagree.

Unless we are funding the construction of renewable energy plants (or equivalent) here, in the Pacific Islands and other developing nations, all we will be doing in effect is hand waving (aka buying carbon credits). Overseas offsetting through buying carbon credits is NOT taking the strong action on climate change for us to do our part to achieve our agreed outcomes. This is a clear sign that we are not being bold enough, and that the suggestions of the report are overall too timid.

46. The report states that up to 1% of future emissions budgets can be brought forward and used early (requiring greater reduction in future to compensate). We believe this is a problematic and dangerous allowance and needs to have some strong caveats around it. In particular, this should ONLY be allowed in the case of large-scale infrastructure projects where the emissions cost is directly related to projected emissions savings as a result of the infrastructure.

#### **Cross-party support for emissions budget**

47. Further to point 58 of council's draft submission, that states support of "having the positions of each political party on the parliamentary record, but it may be unrealistic to expect that cross-party support can be reached on how to achieve the emission budgets", we believe a bare parliamentary majority supporting actions that will meet our Paris Accords commitments is preferred to a cross party accord on measures that are inadequate and mean that New Zealand continues indefinitely to be a net contributor to climate heating.

#### **Economics and Financial Instruments**

48. The strongest opposition to the Commission Report has come from those who oppose a largely regulatory approach to achieve the climate change and emissions reductions that we have undertaken to achieve as a nation. They claim that the market is the best mechanism for achieving these, guided by financial instruments, in particular an improved Emissions Trading Scheme. However, the record to date of the market, light-handed regulation and the Emissions trading Scheme in slowing, let alone reversing, the continuing substantial growth in New Zealand's carbon emissions. The Emissions Trading Scheme



to date has clearly been ineffective, has been gamed frequently, has been unfair in many ways and proved too blunt a tool to direct investment into where it is most appropriate, e.g., quality sustainable forestry on stable land on land where trees are more appropriate than horticulture. There is no good reason to believe that the EMS could be reshaped to become a laser sharp emissions reduction tool. To the extent financial tools would be useful, instruments like some form of carbon tax would be a fairer and more effective instrument.

49. Note the importance of considering how financial instruments and taxation may harness the economic system to incentivise reduction in carbon emissions.

50. It has been argued that carbon taxes, may be more effective than any action in itself. The working party on tax reform led by Michael Cullen identified a number of areas where taxation could incentivise low carbon emissions. They should be considered again.

We agree with point 197 of council's draft submission that central and local government could play a stronger role in to ensure the full costs of greenfield development are met by developers and/or that regenerative brownfield development is incentivised, but also add that the development contributions must pay for all appropriate social infrastructure as well as physical infrastructure.

#### Points Waitematā Local Board particularly supports

52. The specific points in council's draft submission that the board particularly agrees with are: 47, 50, 51, 79, 82, 85, 90, 91, 101, 102, 103, 107, 115, 116, 127, 135, 141, 154, 158, 182, 189, 190, 195, 197, 199, 207, 208, 209, 211, 234, 245, 250, 251, 265, 270, 277



#### Attachment B: Waitematā Local Board feedback on Hikina te Kohupara - Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050

#### Urban Form

1. We agree that better land use planning is necessary to reduce car dependency and make it more attractive for people to use PT and active modes.

2. We urge that boundaries are set around all our major cities, that prohibit new building /sprawl beyond those limits. New Zealand cities are not dense and have plenty of potential to increase population without extending current city boundaries.

3. We believe affordable housing, and changes in the housing market, have a key part to play in reducing transport emissions. The current system forces many people out of central areas and into suburbs with long commutes where housing is more affordable. Empty houses in popular areas need to be taxed/fined accordingly.

4. Walkable mixed-use neighbourhoods are usually more vibrant, desirable, safe and interesting and reduce the need for people to travel by emitting modes.

To ensure that intensification does not mean a rise in vehicle congestion, and loss of walkability of an area, we would recommend focusing the provision of primary homes in places that are very close to regular rapid public transport with any carparking provided outside of the pedestrian-focused zone so as to disincentivise car use without reducing access to the city's opportunities.

#### Shifting Investment Focus

5. We agree that central and local governments need to shift their planned investments away from vehicle inducing road expansions and towards PT services and enabling active modes, including bus and cycle lanes. This needs to happen quickly and needs to represent a significant investment and shift in the status quo.

6. We advocate boldness in setting policy, and in implementing the resulting policy, to ensure we meet our carbon reduction targets on time. It is worth noting that despite decades of climate awareness and action, our transport emissions are still increasing. Tinkering around the edges will continue to lead to increasing emissions, when what is urgently required are massive reductions. We note that although the action required now may seem drastic, even more drastic changes will be required in the future if we delay action any further.

7. We support the principles in Hīkina te Kohupara, and believe that action and investment now will have a better chance of meeting our emissions targets than action and investment that occurs only in the future. We note that there will inevitably be resistance to changing the status quo, and this resistance needs to be factored into timelimes, planning, and implementation mechanisms.

8. We fear developers will always want to maximise profits which may not lead to the diversity of homes at different price points desired and so would recommend that changes are made to planning rules to make it easier for councils to use inclusionary zoning so as to ensure a diversity of housing, including more affordable housing be built in well-connected locations.

9. We recommend considering how to ensure finance for housing is more equitable for all parts of the market, including small housing, co-housing and papakainga housing.

#### **Public Transport**

10. We need to address New Zealand's reliance on air travel for domestic travel. We need to move people onto rail for intercity journeys. This needs to be a fast, convenient, comfortable and affordable alternative to domestic flights.



11. Public transport needs to be easier, cheaper and more convenient than using private cars/ride shares for the same journey.

12. We recommend mandating the return of cash fares to ensure public transport is always easily accessible for residents and visitors.

13. We would note there is a desire from Auckland's local boards to increase the service of electric ferries which would also remove cars from the roads.

#### Active Modes

14. Active modes should have dedicated space on all our city streets, and NOT at the expense of pedestrians. Cycling and other active modes need to be made safer, including by building extensive separated cycle lanes through all cities, and to allow separated cycling options for inter-city travel.
15. We need to prioritise mode shift in our investment and KPIs. We need a large, immediate investment in protected, interconnected and extensive cycleways and in streetscaping and in better maintained footpaths and walkways, to get more people walking and cycling. Cycling needs to feel safe if we want large uptake.

16. New developments should be designed to be pedestrian-focused with safe active mode links to the cycle network and/or public transport network as appropriate.

#### **Co-Benefits**

17. We agree with the assessment on page 8 of the document that this is an opportunity to make positive changes not only in our transport emissions, but also to our health and wellbeing, particularly for children and youth, our ability to access opportunities, and in the cohesiveness and connectiveness of our communities.

18. We believe the health benefits of reducing personal vehicle use should be included in any cost benefit analysis of planned infrastructure project.

#### **Reducing the Emissions of our Personal Vehicle Fleet**

19. We believe there need to be strong efficiency and emissions regulations for all vehicles entering New Zealand, beginning as soon as is practicable.

20. We are concerned about the health and wellbeing impacts of EV production on the people involved in the extraction of resources used in EV batteries up the supply chain. As such, we believe the focus should be on reducing the need to personal vehicle use, and switching to EVs only when mode shift is not possible. The human cost of EVs need to be factored into any policy or investment decision.

#### **Just Transition**

21. We agree that the Government needs to consider the impact of policies and changes on different communities to ensure a just transition.

#### A Mental Shift

22. As well as offering alternative options to personal vehicle use, such as widespread public transport accessibility and safe and convenient active mode corridors, we also need to change New Zealand's public psyche concerning private vehicle ownership as a status symbol.



#### Innovation

23. We warn against relying on private sector innovation as a means of reducing transport emissions. For example, Uber and rideshare has likely shifted some public transport journeys onto personal vehicle journeys. Private sector innovation does not automatically (or even generally) lean on the side of lower emissions.

#### Freight

24. Chapter 8 of the discussion paper talks about shifting some freight to rail and coastal shipping. We believe the vast majority of our domestic freight needs to shift to these transport methods, with truck freight only occurring in the minority of cases. This requires a large investment in a fast, extensive and reliable rail network. We need to focus on shifting our freight to rail and shipping. The use of rail would also greatly reduce our road maintenance costs, without a corresponding increase in rail maintenance.

#### Te Tiriti o Waitangi

25. We support partnership with Māori and agree that the principles of whanaungatanga (relationships) and kaitiakitanga (environmental guardianship) are central to understanding the total system and should underpin ongoing engagement to reduce emissions from the transport system.

#### Other Feedback

26. Although outside the scope of this document, we note that the highlighted statement on page 5, "Globally, reducing carbon dioxide emissions to net zero is the highest priority in the fight against climate change, because unlike other gases it stays in the atmosphere for hundreds of years." This seems to be deliberately aimed at giving New Zealand a way out of dealing with agriculture emissions. This is almost deliberately anti-science, as, over a 100 year period, a kilogram of methane emissions causes 34 times the warming of a kilogram of carbon dioxide.



### Whau Local Board

- At its meeting of 28 April 2021, the Whau Local Board resolved (resolution number WH/2021/38) to delegate authority to the Chair and Deputy Chair to approve and submit the local board's input into Auckland Council submissions on formal consultation from government departments, parliament, select committees and other councils.
- 2. The Whau Local Board welcomes the opportunity to provide feedback for inclusion in Auckland Council's submission on central government's Emissions Reduction Plan consultation document.

#### **Overall strategy**

- 3. The Whau Local Board supports in principle a strategy which will enable us to meet our commitments under Taruke-a-Tawhiri and our commitment The local board is committed to delivering on Aotearoa/New Zealand's commitment to the Paris Agreement to limit global temperature rise to well below 2°C above pre-industrial levels and pursue all possible efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
- 4. The local board notes the recent announcement from the Government for more aggressive emissions reduction targets. The local board supports this more aggressive target, as all previous attempts to limit carbon emissions have failed, and a huge collective effort is now required.
- 5. The local board applauds the development of this detailed and comprehensive consultation document, and hopes that there is sufficient commitment at all levels of government to actually implement the changes that are required, noting that progress in tackling climate change has been inadequate globally, including in Aotearoa/New Zealand.
- 6. The Whau Local Board Plan 2020 contains numerous (mostly advocacy) items around transport mode shift, promotion of active transport modes, incentivising non-peak travel, incentivising public transport uptake, promotion of trains, promotion of disruptive technology to reduce vehicle usage, increasing community awareness of climate change, incentivising building with high green-star ratings, retrofitting public buildings to improve green-star ratings, incentivising use of water-sensitive devices such as detention tanks, promotion of the circular economy and resource recovery and reducing waste to landfill. However, none of these are areas where local boards can lead.

#### Meeting the net-zero challenge

- 7. The Whau Local Board agrees that a collaborative multi-agency approach is preferable to ensure buy-in from all sectors. The local board also acknowledges the importance of public engagement to ensure that the public understands and feels empowered around implementation of necessary changes. However, the local board believes that this problem is urgent, and that we cannot afford to have meaningful progress and opportunities for implementation held back by lagging sectors, minority voices, or those who might be influenced by misinformation or motivated by short-term financial game at the environment's expense.
- 8. The local board believes that strong, clear direction from central government and use of all possible legislative and regulatory instruments to create statutory mandates for change will be the single factor that can create a genuine transformational shift in Aotearoa/New Zealand's carbon emissions profile in the longer term.
- 9. The local board believes that government agencies can learn a huge amount from the holistic principles of environmental management found in Te Ao Māori including kaitiakitanga and should

ensure that these principles sit at the heart of any emissions reduction plan. To this end, partnership with mana whenua and Māori in the community and upholding the principles of Te Tiriti o Waitangi are essential to the success of any plan, and to ensuring an equitable transition, noting that Māori are over-represented in all indicators of deprivation. Work should be Māori-led wherever possible.

- 10. The local board urges for a transition which is equitable and has mitigations in place to protect deprived, marginalised, and isolated communities from the greatest impacts and from any unintended consequences. This includes giving clear signals to industry so that businesses can prepare and build the necessary skills within their existing workforces, and enabling people to upskill to ensure ongoing employability in a low-carbon economy. While educating individuals and households is important, there has been a tendency to overstate the role of individuals in households where in reality strong government direction and mandates is the overwhelmingly influential factor in our transition.
- 11. The local board notes the positive impacts of the COVID-19 alert level restrictions (reduced vehicular and air travel, uptake of active transport modes and outdoor activities, more working from home, and reduced ability to purchase single-use consumer goods that will end up in landfill). The local board supports opportunities to embed these changes in habits to achieve longer term emissions reductions.
- 12. The local board believes this consultation document identifies the relevant issues but notes that these same issues have been identified and discussed for many years and that this consultation document will be meaningless unless matched by a commitment to aggressive implementation of the necessary measures.

#### Urban development and planning

- 13. The Whau Local Board is concurrently providing feedback on the Resource Management (Enabling Housing Supply) Amendment Bill currently before Parliament and has noted the lack of emphasis on the need for emissions reduction in that document. Particularly given that it is the same ministry responsible for this work, the local board would have thought that the critical importance of the climate change challenge would ensure that it has a central role in a broad range of policy responses.
- 14. The local board is deeply concerned about Tāmaki-Makaurau/Auckland's growth and how this is managed. While there is a housing crisis, there is also a climate crisis and the two must be considered together. The local board strongly supports a transition to a high-quality compact urban form, but is concerned to ensure that emissions reduction is a key driver of policy direction around urban planning. The current National Policy Statement on Urban Development (NPSUD) ranks environmental considerations as the last of eight objectives. This approach is insufficient to ensure that urban design and planning are able to achieve their potential in reducing our carbon emissions, particularly in cities and most particularly in Tāmaki-Makaurau/Auckland.
- 15. A strong, directional and aspirational approach to urban development and town planning is critical for supporting quality high density urban environments. Poor quality high-density environments can have negative effects. The local board notes that Aotearoa/New Zealand has an unfortunate history of ad hoc, low-quality infill leading to poor social, aesthetic, and environmental outcomes. To this end, the local board supports the current process to replace the Resource Management Act (RMA), noting that the proposed Natural and Built Environments legislation.



16. Strong direction to incentivise brownfields rather than greenfields development is essential to reducing carbon emissions, along with creating more cohesive communities and more liveable cities. It is disheartening that many of the Auckland Council Group's current policies and strategies, including the current Auckland Unitary Plan (noting that this is required to be amended under the NPSUD) still assume sprawling greenfields development as the default norm. This needs to change as soon as possible, with a shift in thinking away from numbers of dwellings towards environmental impacts of neighbourhoods.

Whau Local Board ickland

- 17. The local board supports incentives to encourage smaller footprints for new housing, increasing building height where permissible, and encouraging best-practice urban design principles to achieve the best results possible for smaller builds.
- 18. The local board supports future proofing all new buildings to meet the challenges associated with climate change in particular extreme weather events.
- 19. The local board supports incentivisation of water-sensitive infrastructure (rain gardens, rainwater detention tanks) to offset the likely increase in impervious concrete surfaces in urban areas associated with increased intensive urban development in cities.
- 20. The local board also notes the current challenges, within existing planning frameworks, of introducing innovative solutions in particular solar panels. These types of intervention need to be made as easy and attractive as possible to developers and homeowners.
- 21. The local board would support not only encouraging but potentially investigating mechanisms to subsidise innovative solutions to reduce carbon emissions in new builds.
- 22. The local board strongly supports introduction of requirements around the provision and retention of green open space ensuring access to passive and active outdoor recreation, and, in particular, restoration of the urban ngahere (tree cover). The local board supports the reinstatement of much wider tree protection (removed in 2012) to reduce carbon emissions, noting local government's relative inability to protect its significant trees and canopy cover under the RMA as it stands.
- 23. The local board supports stronger mandates around consideration of the circular economy in industry and supply changes, including use of building materials. The local board supports incentivisation of deconstruction and reuse of building materials on existing developed sites to reduce the volume of waste to landfill.
- 24. The local board notes that, with temperatures set to increase, there is a need to consider efficient cooling as well as heating for new builds with people increasingly using electricity to cool their homes and workplaces. Situation on site and passive house principles should be prioritised here.
- 25. The local board supports in principle retrofitting of existing buildings to improve their performance but also note the desire of communities to see their built heritage retained and protected so would have concerns about changes that would lead to the neglect or demolition of heritage buildings if the cost of necessary upgrades to building owners was excessively high.

#### Transport

26. The Whau Local Board strongly supports prioritisation of active transport modes together with a greater emphasis on safety. The local board supports Council's advocacy for an increased Funding Assistance Rate for walking and cycling improvements, road re-prioritisation and public transport improvements, however, note that this would require additional funding to the National Land Transport Plan and/or new funding sources. Uptake of active modes needs to be much more



aggressively pursued. It is disappointing that walkways (other than footpaths) do not qualify for funding through the National Land Transport Fund.

- 27. Current transport policy, as well as under-investing in walking and cycling, is insufficiently innovative and doesn't consider new and emerging forms of micro-mobility and disruptive technology. This needs to be a focus for Waka Kotahi and local councils, and is another area where greater strategic alignment is required between central and local government (through, for example, the Government Policy Statement on Land Transport and the Land Transport Management Act and regional land transport plans).
- 28. Small improvements to key corridors like planting more trees within the road reserve (thereby creating green corridors) would create incentives to uptake of active modes but this would also in itself assist in mitigating carbon emissions.
- 29. The local board strongly supports an increase focus on technical innovation, including the development of new and innovative approaches to demand management, to reduce carbon emissions. Aotearoa/New Zealand needs more investment in high-speed broadband and telecommunications tools to reduce the need for travel. The private sector should also be key partners in this discussion as businesses have huge potential to develop and pilot new approaches that are efficient and will foster economic growth while reducing the need for unnecessary vehicular transport.
- 30. The local board strongly supports decarbonisation of Aotearoa/New Zealand's entire vehicular fleet. Clearly there is an opportunity for the public transport fleet (and a joined-up approach to converting government fleet vehicles) to electric, but this will only account for a small proportion of vehicle emissions and will not solve the problem on its own. The local board also has some concerns around provision of infrastructure to support a significant future increase in EVs (for example, some parking options currently make EV ownership impossible, in addition to the need for sufficient availability of charging stations in almost all locations to which people drive)
- 31. The local board strongly supports incentivising uptake of not only EVs but also micro-mobility devices such as e-bikes and e-scooters provided that they are safe, and that regulation keeps pace with innovation (which is currently not happening).
- 32. Access to private EVs is out of the question for many (probably most) people in the Whau Local Board area. Central government will need to take a leading role here as this is not something local government can address and the private sector will not take the lead without very clear signals from central government, which is not yet happening.
- 33. The local board is committed to seeing an equitable transition that does not disproportionately impact those who can least afford it. The local board has previously expressed its concerns around mechanisms such as fuel taxes and congestion charging insofar as they most heavily impact those who already spend the most on transport (as a proportion of their incomes).
- 34. In order to achieve an equitable transition in respect of transport emissions, the local board supports expansion of the Rapid Transit Network to ensure access to the places people need to travel. In particular, the local board is concerned to ensure access between the southern and western parts of the Auckland Region, which are poorly connected by public transport and at risk of severance. To this end the local board supports completion of the Southdown Rail Link between Onehunga and Avondale.

- 35. The local board would also like to see a longer-term shift away from current expectations from Waka Kotahi around farebox recovery, enabling councils to introduce low-cost (or free) public transport for some groups.
- 36. The local board wants to see a growing local economy, more jobs for its people and increased local employment opportunities. To meet the challenge of reducing transport emissions (and the boarder issues around the challenges of climate change generally) it is critical that the private sector is part of the solution, and that Aotearoa/New Zealand has a freight system that is efficient, future proof, and able to accommodate economic and population growth without having a detrimental environmental impact.
- 37. The local board supports consideration of mode shift away from trucks in favour of rail and sea freight. However, it acknowledges that for many industries this transition is not feasible and a transition to lower emissions vehicles is essential.
- 38. The local board is also interested in exploring inefficiencies, waste and unnecessary carbon emissions throughout supply chain. The local board would urge central government to work with our ports, business advocacy groups, the freight industry and with Kiwirail, to identify opportunities to reduce in unnecessary road-based freight without negatively impacting on growth and productivity.
- 39. The local board would also see a role for public education around the carbon emissions associated with freight supporting the moving of discretionary consumer goods and encouraging people to consider the environmental impact of their purchases and to find greener ways of fulfilling consumer demand.





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#### Auckland University of Technology (AUT)

#### Submission to the Ministry for the Environment consultation for *Te hau mārohi ki anamata - Transitioning to a low-emissions and climate-resilient future*

#### 24 November 2022

#### Submitters:

- Dr David Hall, Chair of the Vice-Chancellor's Sustainability Steering Group, AUT University.
- Lucy McKenzie, Director of Sustainability, AUT University.

AUT's mission is great graduates, and we deliver this by creating exceptional learning experiences for our students that are informed by relevant, globally recognised research. In addition, AUT has a responsibility to contribute to progressing sustainability nationally through our core activities - learning, teaching, and research, as well as our university operations. AUT's Sustainability Roadmap includes targets in all these areas, as well as highlighting AUT's commitment to the United Nations' Sustainable Development Goals (SDGs). AUT's inaugural Sustainability Report, published in November 2021, shows our progress against our operational targets and towards the SDGs. It also provides a benchmark for measuring our progress in embedding sustainability in our learning, teaching, and research in the years to come. More details about AUT's efforts to reduce emissions and to practice sustainability leadership can be found in the AUT Sustainability Report: <a href="https://www.aut.ac.nz/">https://www.aut.ac.nz/</a> data/assets/pdf file/0004/572449/AUT-Sustainability-Report-2020-v7.pdf

This submission focuses on the research contributions that AUT is already making to the development of climate solutions, which could provide an evidence base for the priority areas of the Emissions Reduction Plan (ERP). AUT strongly endorses the ERP's emphasis on partnership: 'This plan will require all New Zealanders to work together to achieve a low-emissions future, where we know our roles and can act together to maximise opportunities... strong policies alone will not be enough to spur the level of investment, innovation and behaviour change required.' AUT is already actively applying its knowledge to the development of climate solutions that benefit Aotearoa New Zealand and the world. Through AUT's Directions to 2025, the university is committed to the discovery and application of knowledge for wellbeing



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and prosperity, working for our city and country, and being a responsible global citizen. AUT's sustainability research is critical to fulfilling this strategy and enhancing planetary wellbeing, and it welcomes the Government's proposals of partnership in co-developing these solutions.

This submission serves to identify AUT-led research that could contribute to the ongoing development of the ERP. <u>Consequently, the policy proposals herein do</u> <u>not represent the official position of AUT,</u> rather they represent the research expertise that AUT is proud to support and enable. This submission addresses only those questions for which AUT has research expertise, or particular operational interests. More generally, AUT is committed to climate action through its Sustainability Roadmap, and generally supports an Emissions Reduction Plan that delivers '*rapid and far-reaching* transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems' (IPCC 2018, *Summary for Policy Makers: Global Warming of 1.5*°, C2).

#### **Nature-based Solutions**

#### Question 4: How can the emissions reduction plan promote naturebased solutions that are good for both climate and biodiversity?

AUT has a number of researchers who focus on Nature-based Solutions (NbS) in both rural and urban contexts.

The shared view of this research cluster is that NbS ought to play a prominent role in the ERP to address climate mitigation and adaptation. Accordingly, the inclusion of NbS in the ERP is welcome. Furthermore, NbS is an obvious candidate for a mission-oriented innovation approach to drive down the costs of NbS and to increase efficiencies.<sup>1</sup> The upscaling of NbS to create biodiverse, resilient, low-emissions landscapes, in both rural and urban settings, is a 'moonshot' mission that could achieve multiple government objectives under the Emissions Reduction Plan, the Aotearoa New Zealand Biodiversity Strategy – Te Mana o te Taiao, National Policy Statement for Indigenous Biodiversity, resource management reform, the forthcoming National Adaptation Plan, and the on-farm sequestration component of He Waka Eke Noa. Such a mission could help to coordinate multiple interested parties across the public, private and research sectors – and AUT is eager to contribute its research to the long-term creation of public value by using NbS to create resilient, low-emissions landscapes.

There are myriad changes to policy settings that might improve outcomes for biodiversity (and hence for NbS); for example, the reintroduction of general tree protections under resource management legislation, or changes to the 1949 Forests

<sup>&</sup>lt;sup>1</sup> For international examples of NbS in a mission-oriented innovation approach, see https://provocations.darkmatterlabs.org/dm-note-5-50e46540dd05

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Act to remove disincentives to the planting of new native forest for harvest. However, as identified by AUT-led research on the public and private financing of NbS in Aoteaoroa NZ,<sup>2</sup> the key lever for change is the creation of a biodiversity payment. Consequently, the transformative opportunity for the ERP is:

- The creation of a multi-value accounting framework for native ecosystems that fall outside of target accounting (e.g. small forests, riparian buffers, wetlands, etc.). This accounting framework would capture biodiversity value in addition to carbon sequestration – and potentially other environmental benefits such as erosion avoidance.
- The creation of a robust measurement, reporting and verifying (MRV) framework for improvements to native biodiversity, both in terms of quantity and quality.<sup>3</sup> The international NbS Guidelines emphasise the centrality of biodiversity to NbS, which is defined as 'the diversity of life from the level of gene to the level of the ecosystem'.<sup>4</sup>
- The creation of policy options for economic instruments that provide a payment for biodiversity value. As per the Tinbergen rule, the optimal ratio of a policy tool to target is 1:1, which implies that the ETS is not an appropriate tool for pursuing the goal of biodiversity, because it is designed to target carbon sequestration (although biodiversity improvements might be a cobenefit of monetising carbon in some circumstances). Accordingly, a distinct but complementary economic instrument is required which targets the unique value of native biodiversity.<sup>5</sup> This economic instrument would be supported by the MRV framework, which can be used to demonstrate the improvement of biodiversity indicators against a defined baseline (biodiversity gains), or the maintenance of biodiversity against a baseline (avoided biodiversity losses).

The AUT Living Laboratories programme is already developing an evidence base to support the development of policy and accounting frameworks for NbS in rural and urban settings. The AUT Living Labs is co-funded by AUT and One Billion Trees Programme (Ministry for Primary Industries) to establish three experimental restoration sites in the Hauraki Gulf catchment to increase ecological and practical knowledge about NbS. The AUT Living Labs' ambition is to increase knowledge about how to successfully and cost-effectively establish old-growth forests, in a way that enhances the mana for local iwi and hapū, in order to inform a catchment-scale approach to integrating NbS throughout the Hauraki catchment, and to learn lessons for revegetation elsewhere in Aotearoa.

<sup>&</sup>lt;sup>2</sup> David Hall & Sam Lindsay (2021) *Scaling Climate Finance: Biodiversity Instruments*. Concept Paper. https://doi.org/10.34721/yc1w-me20

<sup>&</sup>lt;sup>3</sup> Norton DA 2021. Native biodiversity and Regenerative Agriculture in New Zealand.

Manaaki Whenua – Landcare Research Contract Report LC3954-17 for Our Land and Water National Science.

Challenge & The NEXT Foundation.

<sup>&</sup>lt;sup>4</sup> Seddon, N., Smith, A., Smith, P., Key, I., Chausson, A., Girardin, C., House, J., Srivastava, S. and Turner, B. 2021. Getting the message right on nature-based solutions to climate change. *Glob. Change Biol.*, 27: 1518-1546. <u>https://doi.org/10.1111/gcb.15513</u>

<sup>&</sup>lt;sup>5</sup> See also Aotearoa Circle (2020). *Native Forests: Resetting the Balance*. Price Waterhouse Coopers (PwC).



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- The AUT Living Labs programme has partnered with Ngāti Whātua Ōrākei to create an experimental restoration site at Pourewa, adjacent to Kepa Bush Reserve. This involves about 9,500 trees on 2.2 hectares of land with an intensive monitoring protocol to generate knowledge about wider ecosystem impacts, such as biodiversity improvements, carbon sequestration, soil and water quality, and more. This project was included as a case study in the global *NbS Compendium* that was launched at the 2019 UN Climate Action Summit in New York.
- The AUT Living Labs have also partnered with Auckland Council and Ngāti Manuhiri to create a second experimental site at Te Muri Regional Park, and with Te Whanghai Trust and Ngāti Paoa to create a third site at Pūkorokoro/Miranda. We are also partnered with Pāmu and Tāne's Tree Trust to apply our ecological monitoring protocol to their restoration sites, in order to enhance knowledge across different geographical regions.
- The AUT Living Labs programme was also recently approved as an official partner for Project LIFEPLAN – A Planetary Inventory of Life, led by University of Helsinki <https://www2.helsinki.fi/en/projects/lifeplan>. LIFEPLAN is a worldwide biodiversity sampling program with about 100 sites worldwide, and AUT Living Labs is the only New Zealand partner.
- AUT Living Labs is also already working with partners to lay the groundwork for an accounting framework for NbS that reflects the unique biological and cultural heritage of Aotearoa New Zealand. This builds on an as-yet unsuccessful application to the MBIE Endeavour Fund: *Nature-based Solutions for resilient, low-emissions rural landscapes in Aotearoa New Zealand*. We are now pursuing aspects of the research proposal via individual contracts with primary sector partners. See Figure 1 for the basis of our NbS framework.

For more information, contact David Hall, Senior Lecturer, Social Science & Public Policy



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Figure 1. General NBS concept (Green only) and our framework for NBS in New Zealand (Green + Orange). Adapted from the original NBS figure from the Oxford University Nature Based Solutions Initiative (NBSI).

AUT is also involved in active research in urban NbS and urban landscape design, especially in the context of its contributions to planetary and public health.

Huritanga mo te Mauri Ora is AUT National Science Challenge (Building Better Homes Towns and Cities) research focused on urban system change and regeneration. Huritanga is led by Associate Professor Amanda Yates [Ngāti Rangiwewehi, Ngāti Whakaue, Te Aitanga a Māhaki, Rongowhakaata] who works with Councils, iwi and communities exploring place-based, indigenous-led strategies and actions for urban transformation in an era of climate and biodiversity emergency. The Huritanga NbS research leverages the potential of cities to be puna ora or living labs that can catalyse system change, for example by modelling and delivering neighbourhood net-zero carbon energy or local urban agriculture initiatives or bluegreen ecological infrastructures.

The \$3.7million programme is currently based in three cities (Rotorua, Ōtautahi, and Te Whanganui-a-Tara). It is focused on building communities of change and taking actions for change in cities, neighbourhoods and communities. The research aims to enhance urban mauri ora or the wellbeing of planet and people, whenua and whanau. Emphasis is on the co-benefits enabled by NbS approaches, that deliver infrastructural amenity with added benefit to human and eco-system wellbeing and function.

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The research is based on building Tiriti-based partnerships for urban system change, particularly between mana whenua and local government. The action research process is supported by ongoing hui between these partners for change. An urban 'compass' maps out key strategic actions for urban mauri ora, holistic social, cultural and ecological wellbeing. The detail of the compass is co-created between city change partners - lwi/hapū and Councils – to help to develop place-based approaches and coordinate across cultural world-views and operationalize the policy in local authority processes and in urban development.

Landscape designer, Gayle Souter-Brown, designed and developed the Scholars' Garden, at the AUT North campus on the North Shore, as a living laboratory for her PhD research. This was designed to measure the effects of a sensory garden on health and wellbeing and whether a garden could be used as a sustainable self-help tool. It draws on her international experience designing playgrounds, and rehabilitation and therapeutic gardens that have benefited people with depression, dementia and autism.

Drawing on this and other international research, the following conclusions can be drawn:

- Access to, and meaningful connection with nature has been found to have significant benefits for human health and wellbeing (Cox, Shanahan, Hudson, Fuller, & Gaston, 2018). These benefits are further increased through access and connection to nature that is in good condition with high levels of native biodiversity (Donovan G, 2021; Donovan, Gatziolis, Longley, & Douwes, 2018a). Yet in Aotearoa, access to nature in general, and especially access to nature with high biodiversity, is currently limited and inequitable. Examination of the evidence endorses the need for a robust policy to increase access to greenspace while enhancing the quality and native biodiversity of these spaces to improve mental health and wellbeing in society.
- Human wellbeing and nature's wellbeing are intricately interwoven. Improving the health of the environment improves the health of people (Richardson, Pearce, Mitchell, Day, & Kingham, 2010). Overwhelming evidence supports the importance of biodiversity to social and environmental determinants of health (Aerts, Honnay, & Van Nieuwenhuyse, 2018; Donovan, Gatziolis, Longley, & Douwes, 2018b; Duarte-Tagles, Salinas-Rodríguez, Idrovo, Búrquez, & Corral-Verdugo, 2015; Hough, 2014; Lovell, Wheeler, Higgins, Irvine, & Depledge, 2014; Souter-Brown, Hinckson, & Duncan, 2021; Wood et al., 2018; World Health Organization, 2017). Yet Aotearoa New Zealand's biodiversity is in decline, (Environment Foundation, 2021) and human health and wellbeing continues to be at risk.
- For Māori, mauri ora represents an integrative life force that connects all rocks, rivers, trees and people. A Mauri ora approach to human wellbeing therefore takes an "all of life" approach that explicitly tackles biodiversity, mental health, and wellbeing together (Yates et al. 2021). A holistic approach

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for restoring nature while enhancing access and opportunities for meaningful connection is therefore critical for improving mental, social, cultural and ecological wellbeing together.

- This evidence is used to rethink urban design to ensure equitable access to greenspace (Souter-Brown, 2015), develop health policies that enable meaningful connection to nature in people's everyday lives (World Health Organization & Government of South Australia, 2010) and redesign school and university estates to mainstream experiences in nature (Chawla, Keena, Pevec, & Stanley, 2014). Working within the interconnections of health and wellbeing, biodiversity and the state of the environment could inspire a range of new solutions that deliver positive outcomes for people and nature. Aotearoa needs greater focus on integrated policy and practice designed to improve biodiversity for human health and wellbeing, to deliver a future where people and nature thrive.
- International evidence across hundreds of studies demonstrate how people engaging with nature can:
  - Reduce depression (e.g., Berman et al. 2012; Corazon et al. 2018).
  - Reduce anxiety (e.g., Bratman et al. 2015; Gould van Praag et al. 2017; Li et al. 2009; Morita et al. 2011).
  - Reduce rumination (e.g., Bratman et al. 2015)
  - Reduce stress (e.g., Corazon et al. 2018; Lee et al. 2015; Park et al. 2010; Triguero-Mas et al. 2013; Tsunetsugu et al. 2013; Tyrväinen et al. 2014; Ulrich et al. 1991; Van den Berg et al. 2010)
  - o Reduce mental fatigue (e.g., Li et al. 2009)
  - Reduce anger and aggression (e.g., Li et al. 2009)
  - Reduce experiences of pain (e.g., Ulrich 1984)
  - o Improve mood (e.g., MacKerron & Mourato 2013; Zelenski et al. 2014)
  - Improve sleep (e.g., Astell-Burt et al. 2013; Morita et al. 2011; Triguero-Mas et al. 2017)
  - Improve cognitive functioning (e.g., Berman et al. 2018; Greenwood & Gatersleben 2016; Schutte et al 2015; Wells 2000)
  - o Improve creativity and problem solving (e.g., Atchley et al. 2012)
  - Boost immune functioning (e.g., Kuo 2015, Li et al. 2007, 2009, 2011; Li 2009)
  - o Increase longevity (e.g., Takano et al. 2002; Villeneuve et al. 2012)
  - Improve relationships (Weinstein et al. 2009)
  - Increase sense of gratitude, generosity, and selflessness (e.g., Piff et al. 2015; Suttie 2016; Weinstein et al. 2009)
- This evidence is being used to rethink urban design to ensure equitable access to greenspace (REF) develop health policies that enable meaningful connection to nature in people's everyday lives and redesign school and university curricula to mainstream experiences in nature throughout.
- Doctors and general practitioners in Scotland have started prescribing nature to children and families as part of their personalised health plans (RSPB 2020). Charities are providing 10-week 'nature prescriptions' designed to

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> inspire long-term lifestyle changes that will have significant and lasting impact on mental wellbeing (doseofnature.org.uk).

- The COVID-19 pandemic resulted in unprecedented and rapid changes to people's day-to-day lives, impacting mental health and wellbeing. Access to nearby nature for people's daily exercise was shown to be especially important for increasing self-esteem, life satisfaction and happiness, while reducing loneliness, depression, and anxiety during lockdown (Soga et al. 2020). Urban nature was also found to be an important source of resilience during social distancing and lockdown (Samuelsson et al. 2020). Nature in and around the home is thought to play a key role in mitigating against potential negative mental health outcomes resulting from the pandemic. Immune function is known to be stronger in people who have regular access to natural environments (Haluza, Schönbauer, & Cervinka, 2014). However, unequal access to nature and the variable quality of nature experience available meant some people suffered disproportionally (Mell & Whitten, 2021).
- Research has shown that living near more trees improves physical and mental health. The higher the density of trees in a neighbourhood, the lower the incidence of heart and metabolic disease (Kardan et al. 2015), the lower the rates of antidepressant prescribing (Taylor et al. 2015), and the higher an individual's mental and physical health (Kardan et al. 2015; Taylor et al. 2015; Van den Berg et al. 2010). People who move from less green neighbourhoods to more green neighbourhoods have also been reported to demonstrate significantly higher mental health with sustained mental health improvements (Alcock et al. 2014).
- Greenspace, canopy cover, and biodiversity tends to be less available in less affluent socio-demographic neighbourhoods (Golubiewski et al. 2021). Urban green policies must go well beyond increasing the number of trees and access to greenspace. These policies must also consider the placement, elements, and quality of this nature and opportunities for people to connect meaningfully to nature to maximise people's experiences and mental health outcomes (Soga et al. 2020). Equitable access to high quality nature in peoples' day-to-day lives must be prioritized to resolve these inequities in Aotearoa.
- Prescribing nature for mental health is a cost effective and affordable intervention for improving human health and wellbeing. Doctors and health professionals could immediately begin 'prescribing nature' to children and families. Such an approach could be coupled with the development of health policies specifically aimed at improving health and wellbeing of their population through enhancing nature. These health policies must acknowledge inequities in access to nature and actively seek to overcome these inequities to deliver access to high-quality and biodiverse natural spaces for all.
- Urban design needs to be reimagined so urban spaces become healthpromoting havens for people and nature. A holistic mauri ora approach could be used to advance an integrative "all of life" approach that enhances mental,



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> social, cultural, and ecological wellbeing together (Yates 2021). Such approaches must be co-created to deliver place-based wellbeing outcomes aligned to the priorities and aspirations of the people who live there.

Opportunities to interact meaningfully with nature in everyday life are critical. These opportunities must extend beyond those prescribed by health professionals and designed into our urban environments. Subsidised experiences in nature should also be prioritised so that people can see and experience the abundance and diversity of life our natural environments can offer. Such experiences should be accessible for all so that no one is left behind and could range from subsidised trips to offshore islands, to guided walks through nature, to creative art projects and community open days. Opportunities to be active and connected to nature should also be embedded in the curriculum of every school and university to ensure all students have opportunity to experience and learn about the natural world while also receiving significant health and wellbeing benefits.

#### • Urban NbS priorities for action for the Emissions Reduction Plan:

- Link energy, land-use, transport and health policy to urban planning and design at local authority level in a way that supports the operationalisation of that policy. For example through the use of urban mauri ora wellbeing 'compasses' that bring a diverse range of policy goals and directions together into one space – as explored in Yates' National Science Challenge Huritanga urban system change research.
- Emphasise the human health co-benefits of NbS, and the synergies with the objectives of the Ministry of Health, by developing policies aimed at improving health and wellbeing through access to nature and biodiversity.
- Redesign urban environments to increase opportunities for all people to connect meaningfully with nature in their day-to-day lives.
- Co-create biodiverse areas that can deliver place-based social, cultural, and environmental outcomes aligned to the priorities and aspirations of the people who live there.
- Embed opportunities for all children to meaningfully connect with nature through redesigned play spaces and through school curricula.
- o Link health policy to urban planning and design at local authority level.

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## *Question 6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?*



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# *Question 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?*

Nature-based Solutions (NbS) are critical for creating dual outcomes with combined mitigation/adaptation benefits.

## NbS builds upon the tradition of ecosystem-based adaptation (EbA), which integrates the use of biodiversity into an overall strategy to help people adapt to the adverse impacts of climate change. Examples of EbA include:

- Sustainable water management, where river basins, aquifers, flood plains,
  - and their associated vegetation are managed to provide water storage and flood regulation services;
- Sustainable management of grasslands to enhance pastoral livelihoods and increase resilience to drought and flooding; and
- Strategic management of shrublands and forests to limit the frequency and size of uncontrolled forest fires.

There is a strong scientific basis behind the use of forests and vegetation for water regulation in hydrological catchments in New Zealand. (See for instance this report co-authored by AUT Living Labs researcher Bradley Case).<sup>6</sup> The presence of forest and vegetation reduces the direct exposure of soil to the eroding impacts of wind and rain. It also regulates water by partially intercepting and returning it to the atmosphere through evapotranspiration, or delaying its flow into waterways. The roots of trees and vegetation. Consequently, forests and vegetation can serve as NbS for climate adaptation by mitigating flood impacts, preventing erosion, and reducing sedimentation. This amounts to avoided private costs of damage to the relevant farms and/or avoided public costs for other property owners or local communities downstream.

NbS can offer long-term protection to sea level rise and coastal hazards by managing and regulating flooding, erosion, sedimentation, and tidal creeks and channels. This can include the restoration of coastal forest and dune habitat, mangrove restoration, the protection and creation of coastal wetlands and estuarine ecosystems, and so on. Such natural infrastructure can be more resilient, adaptable and cost-effective than hard infrastructure, especially for areas exposed to high-frequency, low-intensity hazards. For example, mangrove root systems build up the

<sup>&</sup>lt;sup>6</sup> Easdale T, Lavorel S, Mason N, Price R, Dominati E, Lucci G, Case B (2021) <u>Environmental co-</u> <u>benefits of non-production vegetation on-farm</u>. 1 Mar 2021.



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coast, which may, under certain conditions, be able to keep pace with sea level rise.<sup>7</sup> Also, because natural infrastructure is comprised of living organisms, it can repair and regenerate after damage, as well as move, migrate, and retreat to adapt to changing conditions. Finally, in contrast to hard infrastructure which deteriorates over a finite lifespan, natural ecosystems can grow stronger over time, potentially providing more robust coastal protection as they mature.<sup>8</sup> For low-lying areas, the creation of natural infrastructure might enable managed retreat, where the retiring of seaside coastal land from agriculture can buy extra time for adjacent land from the encroachment of sea level rise.

Accordingly, AUT supports a focus on NbS in the Emissions Reduction Plan as part of its climate adaptation strategy, not only as a source of carbon sequestration for climate mitigation.

For more information, contact Bradley Case, Senior Lecturer, Applied Science

# 12. Reflecting on the Commission's recommendation for a mechanism that would build strong Te Tiriti partnerships, what existing models of partnership are you aware of that have resulted in good outcomes for Māori? Why were they effective?

Te Arawa (Rotorua) and Ngai Tūāhuriri (Ōtautahi) are research partners contributing to a Te Tiriti partnership model for urban system change. In collaboration with the AUT National Science Challenge (Building Better Homes, Towns and Cities) research programme Huritanga these mana whenua are creating Te Tiriti partnership models for urban ecological and socio-cultural wellbeing.

- Te Arawa has co-created a mauri ora holistic wellbeing workshop process and guide for housing development (see 'compass' figure below) which they are currently using to advise lwi developers
- The housing development compass is Te Arawa's approach to realizing their 2050 Vision (<u>https://www.tearawavision.nz/</u>) for mauri ora holistic wellbeingled rohe regional development
- Rotorua Council is now exploring a Te Tiriti partner compass to guide Council planners and policy makers to support mana whenua aims for social, cultural and ecological wellbeing achieved through nature-based urban approaches, renewable energy systems, and circular economy transitions.

 <sup>&</sup>lt;sup>7</sup> McIvor, A. L, T. Spencer, I. Moller, and M. Spalding. "The Response of Mangrove Soil Surface Elevation to Sea Level Rise. Natural Coastal Protection Series: Report 1." Cambridge Coastal Research Unit Working Paper. The Nature Conservancy, Wetlands International, 2012.
 <sup>8</sup> Sutton-Grier, A. E., K. Wowk, and H. Bamford. "Future of Our Coasts: The Potential for Natural and Hybrid Infrastructure to Enhance the Resilience of Our Coastal Communities, Economies and Ecosystems." Environmental Science & Policy 51 (August 2015): 137–48


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 Ngai Tūāhuriri is now developing a mauri ora holistic wellbeing compass and Ngai Tūāhuriri will then introduce this intention and action guide to the Ōtautahi Council as a means of bridging between Council and Iwi and building a collaboration that enables emissions reduction practices through NbS, netzero carbon and circular changes to ecological, energy and economic infrastructures and systems

This research is just in its first year but already the uptake has been fast and enthusiastic. The Te Tiriti partnership model has been effective in that:

- the compass meets the needs of mana whenua and Council, and enables Council to support key mana whenua aspirations for the wellbeing of their people and environment
- particularly both mana whenua and Council representatives have noted their lack of capacity, the complexity of the current policy and action landscape
- and the urgent need for models and approaches that support Tiriti partnership and collaboration for system change for urban wellbeing
- Mana whenua have found the compass to be an effective means to convey the mauri ora holistic wellbeing model which their development processes are built around
- And the specificity of the urban transitions and actions visualized give clear directions to Council staff to help to operationalize change practices

For more information, contact Amanda Yates, Associate Professor, School of Future Environments



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*Figure 2. Urban system change: Te Arawa - Mauri Ora Housing Development Wellbeing Compass. (AUT / He Puna Ora: Urban Regenerative Action Lab).* 

Question 22. How can new ways of working together, like missionoriented innovation, help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climateresilient economy?

#### Mission-oriented innovation

AUT recently supported the student placement of two Masters students from University College of London's Institute for Innovation and Public Policy (IIPP), to undertake a research project with MBIE on the potential for mission-oriented

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innovation in Aotearoa NZ. IIPP's work on mission-oriented innovation, especially the work of IIPP's Mariana Mazzucato, has been integral to the development of the missions framework. AUT is ready and willing to become a research partner in mission-oriented approaches to climate solutions where it has relevant research expertise.

For more information, contact David Hall, Senior Lecturer, Social Science & Public Policy

### Sustainability officers

Since 2020, AUT has had an ongoing research partnership with the Sustainable Business Council, the Sustainable Business Network and Oxygen Consulting to assess the working practices of Sustainability Officers, data collected includes sustainability resourcing, partnerships, skills development, leadership support, inhouse versus outsourcing of carbon measurement and reporting, etc. To date we have collected 2020 and 2021 data and are getting ready to collect 2021 data, which will enable deeper analysis into patterns of collaboration and ways of working together towards sustainability outcomes.

For more information, contact Marjo Lips-Wiersma, Professor, Business School

### Urban system change

A 'moon-shot' mission strategy is at the centre of AUT urban regeneration research funded by the National Science Challenge (Building Better Homes, Towns and Cities). The research programme Huritanga mo te Mauri Ora focuses on urban system change towards socially just net-zero carbon energy infrastructures, ecological regeneration and circular bio-economies. The action research is aiming to build a community of cities that are collectively innovating in urban system change through a collaborative and cross-cultural process.

The research aims to:

- catalyse the potential of cities to lead in urban system change
- it emphasizes mātauranga Māori and nature-based solutions to gain multibenefits and synergies as climate change and biodiversity crisis are addressed together, along with socio-cultural justice and human wellbeing initiatives
- we are currently working with lwi/hapū and Councils from two cities (Rotorua and Ōtautahi) to test out this system change process
- we are working with Crown agency Kāinga Ora to explore the potential of a Kāinga Ora compass to help guide a sustainability-innovation pilot project testing 5 different building systems certified to Passive House standard.

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> Kāinga Ora is looking to strengthen the biodiversity and community outcomes for the project and see the Mauri Ora Compass as a potential guiding and measurement tool.

The system change process is supported by:

- Ongoing hui between partners for change
- A co-created mauri ora 'compass' that maps out key strategic actions for urban mauri ora, holistic social, cultural and ecological wellbeing
- The detail of the compass is co-created between city change partners lwi/hapū and Councils largely – to help to develop place-based approaches and coordinate across cultural world-views.

The intent is for a city system-change 'moon-shot' – the development of community of cities that are coordinated in their actions for social, cultural and ecological wellbeing in a way that can deliver a fair and inclusive society and a productive, sustainable and climate-resilient economy. Working collectively with shared strategies for change can help to test, model and prove change on the ground, driving system change innovation and investment. The compass (see figure 2) focuses attention to the key transitions necessary in ecological regeneration and land-use models, energy systems, and economic systems, delivering realizable recommendations for change at a city scale. Huritanga programme is now working with other cities, neighbourhoods and communities, in addition to Rotorua and Ōtautahi, to grow the community of city-changemakers.

For more information, contact Amanda Yates, Associate Professor, School of Future Environments



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Figure 3. Urban system change: Mauri Ora Holistic Wellbeing Compass. (AUT / He Puna Ora: Urban Regenerative Action Lab).

# *Question 23. Is there anything else you wish to share in relation to government accountability and coordination?*

The ERP document implies an important role for both public and private procurement policies and practices (p.33). Recent steps in New Zealand public procurement policies are good. However they do *not go far enough* to meet the climate goals as recent procurement research on European best-practices shows (Andhov et al., 2020). Most of the environmental impact and most of the added value is created in supply chains, viz. public procurement suppliers (McKinsey, 2020; Johnsen e.a., 2019). Public procurement policy needs to better stimulate innovations on zero-emission with such suppliers, and needs to better stimulate zero-emission policies and strategies within such suppliers. Additionally, NZ public procurement policies currently do not cater for circularity (Report p. 94-95; Alhola e.a., 2019; Sönnichsen e.a., 2020). Implementing circular procurement in NZ requires upfront investment from public organisations and a more mature supplier market. Particularly in the NZ context suppliers are often relatively small. These SMEs often lack the dynamic capabilities and the means to invest in innovative solutions for public organisations,



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> and equally lack capabilities and means to make their own supply chains carbon neutral. With an annual spend of roughly NZ\$50 billion, public procurement is an important lead customer, and public procurement policies should stimulate and support such SMEs. With reference to p. 51, 94 of the report: Overseas public procurement e.g. organise contestable funding mechanisms for innovative solutions, but not mechanisms all are equally successful (Staal e.a., 2021). Note that most NZ sustainable public procurement policies are currently geared at large public procurement organisations. Decentralised public procurement organisations spend approx. NZ\$10 billion and more often interact with small suppliers. Auckland University of Technology and Victoria University Wellington run a small research programme to increase procurement performance of small NZ public and private organisations. This research focuses on developing evidence-based tools and bestpractices for innovation procurement and sustainable procurement. The ERP document aptly demonstrates the need for further procurement research and policy design.

For more information, contact Anne Staal, Senior Lecturer, School of Future Environments

## Funding and financing

# Question 24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?

The Government has made excellent progress on the recommendations on climate finance made in a report commissioned from AUT by the Ministry for the Environment, *Climate Finance Landscape for Aotearoa New Zealand: A Preliminary Survey.*<sup>9</sup> The Government is to be commended for mandating the Taskforce for Climate-related Financial Disclosures framework, establishing NZGIF, and addressing structural problems with the Emissions Trading Scheme which diminished its capacity to create a meaningful price on carbon.

However, one recommendation from the *Climate Finance Landscape* report which remains outstanding is the development of a pipeline of climate-aligned projects:

Developing a transparent pipeline of infrastructure projects is recognised as an important enabling factor by G20 leaders for facilitating global investment and infrastructure development.<sup>10</sup> To create a pipeline of "bankable" or investable projects in the short-, midand long-term enables coordination, information gathering, problem solving, and a capacity for pre-emptive planning. It can also overcome silo-isation, where only particular agencies have knowledge of plans for specific infrastructure and its consistency with sustainable and climate-aligned development objectives. Cross-sectoral transparency

 <sup>&</sup>lt;sup>9</sup> David Hall and Sam Lindsay (2017), *Climate Finance Landscape for Aotearoa New Zealand: A Preliminary Survey*, Report Prepared for the Ministry for the Environment, Auckland: Mohio.
 <sup>10</sup> OECD (2017), *Investing in Climate, Investing in Growth*, Paris: OECD, p.29.



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> also helps to gain the confidence of private sector partners; in this sense, it involves extending the practice of disclosure and reporting for current assets to future assets also. Finally, devising a pipeline creates an opportunity to analyse infrastructure projects in light of international obligations and expectations under the Paris Agreement, to assess whether projects align or misalign with emissions reductions objectives and revise infrastructure projects accordingly, or to reassess infrastructure projects in light of revised emissions targets and safe pathways.

# Subsequent research and stakeholder engagement by AUT's <u>Climate Innovation Lab</u> corroborates that <u>the lack of an investment-ready pipeline remains the major</u> <u>barrier to increasing flows of private capital into low-emissions investment in</u> <u>Aotearoa.</u>

The need for a climate-aligned investment pipeline was reinforced by the Covid pandemic which prompted an economic stablisation and stimulation programme that included significant infrastructure investment. If an infrastructure pipeline was already established and pre-screened for its alignment or misalignment with climate mitigation and adaptation objectives, then the Government could have accelerated these projects with 'no regrets' from a climate change perspective. In reality, the New Zealand Government was forced to take a more ad hoc approach to identifying infrastructure projects. AUT-led analysis for the international research consortium Energy Policy Tracker <htps://www.energypolicytracker.org/country/new-zealand/>finds that, since the start of the pandemic, only 11.6% of total energy-related economic stimulus went to unconditionally clean energy (see diagram below). 50.6% went unconditionally to fossil fuel related initiatives (note that this is heavily weighted by the Air NZ standby loan facility which is a strategic necessity, but might be shifted to the transitional 'fossil conditional' category if the loans has 'green strings attached').



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Source: Energy Policy Tracker < https://www.energypolicytracker.org/country/new-zealand/>1

Consequently, AUT researchers will continue to develop analysis in this space, especially through its support for the Climate Innovation Lab <https://www.mohio.co/>, and recognises the important work that Treasury and MfE' are currently undertaking to assess how the public finance system can provide this, through the annual Budget process, alignment of broader public spending, Government's coordinating role in encouraging climate investment in the private sector.

For more information, contact David Hall, Senior Lecturer, Social Science & Public Policy

# *Question 26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?*

The Government is aligning with international best practice by taking an integrated approach to emissions reductions, which situates the Emissions Trading Scheme within a policy mix. AUT researcher Dr David Hall recently co-authored a working paper which surveys the literature on policy mixes. See here:



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https://planetaryecology859820530.files.wordpress.com/2021/11/emissions-pricingworking-paper.pdf

However, while overlapping policies are warranted, the Government needs to mitigate against the risk of counterproductive policy interactions, and where possible identify the policy interactions that will be synergistic and mutually reinforcing. The Government would therefore benefit from an evaluation framework for non-pricing policy within the context of the ETS, in order to anticipate which policy interactions are desirable given multiple variables. The research on the evaluation of overlapping policies is only emerging, but there are examples such as:

- Innopaths Decarbonisation Policy Evaluation Tool
- https://www.tandfonline.com/doi/abs/10.1080/14693062.2021.1907276
- https://www.sciencedirect.com/science/article/pii/S0048733316300506

For more information, contact David Hall, Senior Lecturer, Social Science & Public Policy

# **Emissions pricing**

# Question 32. Are there any other views you wish to share in relation to emissions pricing?

AUT has an ambitious Sustainability Roadmap which aims to halve our carbon emissions by 2025. Within the context of the Emissions Trading Scheme, commitments like AUT's raises the issue of the 'waterbed effect', which means that the emissions reductions that AUT makes could free up NZUs for other emitters to use, therefore 'neutralising' AUT's impact in terms of total national emissions.

However, in <u>the working paper</u> co-authored by AUT researcher Dr David Hall, it is noted that the waterbed effect is not inevitable. Both the EU ETS and NZ ETS – and indeed others such as the California Cap-and-Trade system – are hybrid instruments that use market stability mechanisms to manage both the volume and the price of units. By managing future volume, the abatement created by ambitious policies can be 'locked in' when the cap descends to occupy the gap that abatements create. In the EU ETS, Phase 4 rules 'puncture the waterbed' (Perino 2018), specifically by postponing the release of allowances (to be stored in the Market Stability Reserve) as a function of the number of stockpiled units in the market.

Now that the Government has a cap on emissions, ETS reform to adjust the settings on volume and stockpile management are critical. Ideally, the Government will take an integrated approach to harmonise emissions budgets, ETS unit supply settings and emissions reduction plan measures. Subsequently, unit volume can be managed to 'lock-in' voluntary emissions reductions and ensure that the waterbed effect is minimised over time. Auckland University of Technology Private Bag 92006, Auckland 1142, NZ T: +64 9 921 9999 www.aut.ac.nz

> Given the effort that organisations such as AUT are undertaking to voluntarily reduce its emissions, it is critical that Government secures these emissions reductions by immediately reviewing the ETS settings in relation to unit volume, especially with an eye to managing the waterbed effect.

# Transport

## Questions 52-55

AUT's emissions profile is dominated by transport related emissions. This is also the sector where AUT only has indirect influence, because staff and students are dependent on existing transport systems and hence the decisions made by local and central government.

Accordingly, AUT strongly endorses the four new transport targets proposed in the ERP, as well as the actions to support achieving them. AUT also affirms that it is ready and willing to be a partner in achieving these, because AUT's interests are aligned with the national interest of creating safe, reliable and dependable transport systems for our staff and students to use in travelling to and between AUT campuses.

### Waste

For more information on waste, contact Jeff Seadon, Senior Lecturer, School of Future Environments

## Question 90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?

International and local evidence has shown that general campaigns have little effect.<sup>11</sup> Education and behaviour change initiatives need to be targeted to projects whereby the target audience can relate to the initiative.

# *Question 92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and*

<sup>&</sup>lt;sup>11</sup> Seadon, J and Giacovelli, C. (2019). "Small Island Developing States Waste Management Outlook". Pp100-101. United Nations Environment Programme International Environmental Technology Centre, Osaka, Japan. Available from https://www.unenvironment.org/ietc/node/44.



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# businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

# Question 93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

Blanket bans like this do not work. There is no way that any waste collector can ascertain whether a bin has the banned items buried under the surface. Already there is a lot of 'wishful' recycling where non-recyclables are put into recycling bins, leaving the recyclers to sort through the material and send it to landfill. This is despite the publicity and even stickers on recycling bins. For example, Since May 4 last year about 2250 truckloads of recycling have ended up at the Kate Valley landfill, costing the Christchurch City Council and ratepayers about \$2.2 million (https://www.stuff.co.nz/the-press/news/126222640/lazy-recyclers-targeted-as-1300-christchurch-properties-lose-the-right-to-kerbside-collections).

# Question 94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

All modern, large landfills in New Zealand already have landfill gas capture. Methane tends to increase after closure, reaching a peak at 5 - 7 years. It then decreases until about 20 years after closure, after which very little methane is produced which would make landfill gas capture viable.<sup>12</sup>

# 97. Do you think the proposals outlined in this document should also extend to farm dumps?

No. Policing the 30,000+ farm dumps would be an impossible exercise. Councils are already stretched to enforce current regulations without adding more to their load.

# 99. What other options could significantly reduce landfill waste emissions across Aotearoa?

Wood waste is a significant methane emitter when it decomposes in landfills. A recent study conducted by AUT found that 38% of waste coming from a residential construction site was timber. San Francisco passed a bylaw require all construction and demolition waste to be sent to a resource recovery centre before going to

<sup>&</sup>lt;sup>12</sup> Agency for Toxic Substances and Disease Registry, 2002. Landfill Gas Primer - An Overview for Environmental Health Professionals. Chapter 2. Agency for Toxic Substances and Disease Registry, USA. Available from: https://www.atsdr.cdc.gov/hac/landfill/html/ch2.html). Hence it is appropriate to require active and recently closed large landfills to capture methane.

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landfills. This could be a useful initiative for New Zealand to reduce the amount of timber going to landfill each year (currently 12.6% (440,000 tonnes) of Class 1 landfills).<sup>13</sup>

# Forestry

# Questions 108-109

AUT has produced research outputs that directly address the questions of how to make native forestry more economically viable, and how to diversify forestry systems. The links to these are as follows:

- David Hall & Sam Lindsay (2020) *Scaling Climate Finance: Forest Finance Instruments*. Concept Paper. <u>https://www.mohio.co/forestfinance</u>
- David Hall & Sam Lindsay (2021) *Scaling Climate Finance: Biodiversity Instruments*. Concept Paper. <u>https://doi.org/10.34721/yc1w-me20</u>

For more information, contact David Hall, Senior Lecturer, Social Science & Public Policy

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<sup>&</sup>lt;sup>13</sup> (Eunomia (2020). Improvements to estimates of greenhouse gas emissions from Landfills).

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24 November 2021

Emissions Reduction Plan Consultation Ministry for the Environment PO Box 10362 Wellington 6143

Sent by email: etsconsultation2021@mfe.govt.nz

#### SUBJECT: Submission on Te Hau Mārohi Ki Anamata - Transitioning to a Low-Emissions and Climate-Resilient Future Emissions Plan Discussion Document

Ballance Agri-Nutrients Limited would like to thank the Ministry for the Environment for the opportunity to make this submission on Te Hau Mārohi Ki Anamata - Transitioning to a Low-Emissions and Climate-Resilient Future Emissions Plan Discussion Document.

The Emissions Reduction Plan will set out the policies and strategies Aotearoa New Zealand will take to transition to a low-emissions future in a way that is achievable and affordable. In the submission attached, we present our own emissions reduction plans highlighting the clear and material contribution Ballance can make with the right policies and strategies in place

We welcome any clarification questions the evaluation team may have on this submission and request the opportunity to meet and discuss the complexity of the issues raised in this consultation process.



Mark Wynne Chief Executive

Cc Glenn Johnson National Operations Manager Nathan Searle - Strategy Manager

#### Submission to the Ministry for the Environment on

### Te Hau Mārohi Ki Anamata - Transitioning to a Low-Emissions and

### **Climate-Resilient Future Emissions Plan Discussion Document**

from

#### **Ballance Agri-Nutrients Limited**

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Commercial Sensitivity: Nothing in this submission is confidential.



# Summary of Submission

#### Ballance has an Ambitious Emissions Reduction Plan

- 1. Our primary emissions source is from the manufacture of urea at our Kapuni site. Recognising the ongoing future demand for urea as the lowest emissions nitrogen fertiliser and its wider application in wood processing and (bio) diesel exhaust emissions control, we focus our emissions reduction plan on this site, while in parallel supporting on-farm reductions.
- 2. Through a staged investment program using known technologies, we can reduce our manufacturing (fuel and electricity) emissions by 83%, corresponding to 182 ktCO<sub>2</sub>e per annum. Further reductions are reliant on a substantial increase in electrolytic hydrogen, and with additional South Island potential opportunities.

#### The Need for a Predictable and Stable Policy Environment

3. The scale and long-term nature of the investments required to realise our emissions reduction plan requires a predictable and stable policy environment. The Government's Emissions Reduction Plan should provide this, following the advice of the Climate Change Commission.

#### Recognition of Hard to Abate Industries and the Need for an Energy Strategy

- 4. Urea production is classed as hard-to-abate industry with its reliance on high temperature process heat, the need for substantial quantities of hydrogen and sources of CO<sub>2</sub> as feedstock to provide the carbon needed to make the urea molecule. The long-term high-cost investments warrant a Hard-To-Abate Industry Strategy with cooperation between Ballance and the Government.
- 5. In parallel, a <u>National Energy Strategy</u> is required to ensure a secure and affordable energy supply, with natural gas available until technology allows its replacement with renewable electricity and alternative carbon feed.

#### The NZ ETS Provides the Carbon Price Signal but also Introduces Uncertainty

- 6. Urea manufacture is an emissions intensive trade exposed (EITE) activity for which industrial allocation is warranted. The current review of industrial allocation policy settings could support or undermine our emissions reduction plan. Any reforms must be carefully considered.
- 7. Recent changes to the NZ ETS have been material and frequent. A stable and durable NZ ETS policy is required.

#### **Facilitated Fast-Track Development Process**

 An increased carbon price on its own is not enough to deliver emissions reductions. To meet the challenge of climate change in Aotearoa New Zealand we need clear policy signals that are bipartisan, including Resource Management Act (RMA) accelerated consenting and innovation support.

#### Making an Equitable Transition

- 9. Ballance fully supports the Government's commitment to a transition that reaches our targets while minimising disruption and seizing the opportunities the transition will bring.
- 10. Support for businesses such as Ballance to lower emissions through predictable policy settings is preferable to loss of manufacturing, job losses and emissions leakage.



# Introduction

- 11. Ballance Agri-Nutrients Limited ("Ballance") would like to thank the Ministry for the Environment for the opportunity to make this submission on Te Hau Mārohi Ki Anamata -Transitioning to a Low-Emissions and Climate-Resilient Future Emissions Plan Discussion Document which was published 13 October 2021.
- 12. Ballance is a farmer-owned co-operative with over 17,000 shareholders and approximately 800 staff throughout New Zealand. With turnover of nearly \$1 billion and total assets of \$760m, Ballance is a top 40 New Zealand owned company that distributes over \$60m per annum to its farmer shareholders. Ballance owns and operates super-phosphate manufacturing plants located in Tauranga and Invercargill, and New Zealand's only ammonia-urea manufacturing plant located at Kapuni, South Taranaki. A full company overview is provided in Attachment 1.
- 13. Ballance supports the framework introduced by the "Zero Carbon Bill"<sup>1</sup> through which Aotearoa New Zealand can develop and implement clear and stable climate change policies that contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels.
- 14. As a farmer owned Co-operative, Ballance's focus is on helping its customers to farm more productively, profitably and sustainably. This focus is closely aligned with the Paris Agreement Article 2(b):<sup>2</sup>

"Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;"

- 15. Ballance also strongly supports continued emphasis on the New Zealand Emissions Trading Scheme (NZ ETS) as the primary policy tool to address domestic greenhouse gas emissions of which industrial allocation policy is an important component.
- 16. The Climate Change Minister, Hon James Shaw, gives the following message in the discussion document:

"We also want to make sure that the emissions reduction plan reflects the part we must all play in the transition to a low-emissions future. Government policy will be crucial, but so too are the plans and strategies you will develop to reduce emissions in your own organisations and communities. We want to hear what these plans are – and how we can support you so that together we build a better, cleaner future."



<sup>&</sup>lt;sup>1</sup> The Climate Change Response (Zero Carbon) Amendment Act

<sup>&</sup>lt;sup>2</sup> <u>https://unfccc.int/files/meetings/paris nov 2015/application/pdf/paris agreement english .pdf</u>

17. In this submission we present our emissions reduction plans, highlighting the clear and material contribution Ballance can make should the right policies and strategies be in place. We require close engagement with Government to realise these opportunities.

# **Ballance's Emissions Reduction Plans**

#### 0.1 Overview

- 18. Ballance has two key opportunities to reduce Aotearoa New Zealand's greenhouse gas emissions:
  - assisting farmers to reduce emissions through innovation and education on nutrient applications. The company overview in Attachment 1 describes some of our initiatives and we are fully engaged on the He Waka Eke Noa Primary Sector Climate Action Partnership; and
  - reducing emissions associated with the manufacture of nutrients, specifically urea.
    Our vision is to transition ammonia and urea production to low emission renewable energy sources.
- 19. We have initiated our manufacturing vision with our investment in green hydrogen in Taranaki (refer Attachment 2). Our green hydrogen journey will initially leverage the use of natural gas, and existing infrastructure and capabilities. We believe this vision is consistent with the Climate Change Commission's principle that we should focus on decarbonising industries rather than reducing production in a way that would increase emissions offshore. The Ballance Kapuni plant is currently the only urea manufacturing facility in New Zealand and our detailed plans focus on this site.

#### 0.2 The role of Urea and Domestic Production Benefits

- 0.2.1 Pastoral farming makes a significant contribution to NZ's economy and to the provision of nutrient dense whole foods to the world.
- 20. Our farmers and growers rely on caring for their natural resources for their and their families' futures, for the wellbeing of the communities and global consumers they serve.
- 21. Food produced by the NZ farming system has the lowest carbon footprint globally.

#### 0.2.2 Urea is appropriate for a low emissions future in NZ pastoral farming systems

22. NPKS Nutrients (nitrogen, phosphorous, potassium, and sulphur) are essential inputs to the global food system. In New Zealand our dairy, vegetable, grape and fruit production is dependent on Nitrogen fertiliser. Farming without nitrogen input, while possible, reduces farm output requiring either the creation of more farmland to maintain food supply or an acceptance



of reduced food production. European studies have found 50% of the world's population depends on the use of nitrogen fertilizer for their food supply.<sup>3</sup>

23. Ballance has recently had independent verification by AgResearch Ltd that urea has 20-50% lower greenhouse gas emissions when compared against other nitrogen fertilisers. This is illustrated in Figure 1 below.



Figure 1 - Comparison of CO2e Emissions for Nitrogen Fertilisers

24. In its Final Advice to the Government, the Climate Change Commission shows a continued requirement for nitrogen fertilisers in 2050, with reduced nitrous oxide emissions across all scenarios based on livestock number reduction, reduced use and introduction of nitrification inhibitors.<sup>4</sup>

#### 0.2.3 New Zealand urea poduction has local and global benefits

- 25. Urea produced by Ballance at its Kapuni ammonia-urea site already has the lowest delivered carbon emissions of urea currently available in New Zealand. This is illustrated in Figure 2 below. Global urea production capacity is presented in Attachment 4.
- 26. Box 1 describes the greenhouse gas accounting approach to feed and fuel emissions components shown in Figures throughout this submission.



<sup>&</sup>lt;sup>3</sup> Erisman et al., 2008

<sup>&</sup>lt;sup>4</sup> Ināia tonu nei : a low emissions future for Aotearoa, Supporting Evidence chapter 12, Figure 12.44

#### Box 1 - Terminology and Greenhouse Gas Accounting Approaches for Urea

#### Terminology used throughout this submission:

"<u>Feed emissions</u>" refers to the end use  $CO_2$  emissions associated with the carbon atom embedded in the urea molecule  $CO(NH_2)_2$ .

- These feed emissions are only released on the use of the urea product, for example on-farm fertiliser.
- The feed CO<sub>2</sub> emissions therefore cannot be reduced.

"<u>Fuel emissions</u>" refers to combustion emissions to meet process heat and hydrogen requirements

 Fuel emissions can be reduced through fuel choice, energy efficiency or renewable electrification projects.

#### **Greenhouse Gas Accounting Approaches**



Energy Sector emissions.

• This is because the natural gas has a point of obligation upstream of the ammonia urea plant and so no differentiation between the natural gas end use is made.

National Greenhouse Gas Inventory<sup>5</sup>

- Under New Zealand's National Greenhouse Gas Inventory reporting, when used as a fertiliser, feed emissions are classified as Agriculture Sector emissions.
- · This better reflects the point of use at which the embedded feed emissions occur.

24 November 2021

<sup>&</sup>lt;sup>5</sup> Refer Ministry for the Environment. 2021. New Zealand's Greenhouse Gas Inventory 1990–2019. Wellington: Ministry for the Environment. IPCC 2006 Tier 1 Category Assessment CRF Category Code: 3.H, Category: Agriculture – Urea Application

- 27. The primary difference between Chinese and Kapuni manufactured urea is the use of coal instead of natural gas.
  - a. The chemical formula of urea (also known as carbamide) is CO(NH<sub>2</sub>)<sub>2</sub> or simplified further CH<sub>4</sub>N<sub>2</sub>O. Natural gas i.e. methane CH<sub>4</sub>, is traditionally the perfect feed for urea manufacture, providing the correct ratio of carbon "feed" and hydrogen contribution to the urea molecule (see Attachment 3 for details of the chemistry and process).
  - b. By comparison, coal can be considered a hydrogen-deficient hydrocarbon with a hydrogen-to-carbon ratio 75% lower than methane, requiring far higher coal quantities to generate the hydrogen required, with excess CO<sub>2</sub> emissions as a result.



Figure 2 – Current Emissions Intensity of Urea by Source<sup>6</sup>

- 28. With shipping emissions also considered, closure of our Kapuni Ammonia Urea site would therefore increase global emissions.
- 29. Domestic manufacturing ensures we have access to key inputs to our biggest export sector. COVID disruption and the subsequent banning of nutrient exports in China, Russia and Egypt highlights the vulnerability of an economy dependent solely on imports.
- 30. In addition to agriculture and horticulture use, Kapuni is:
  - a. the key supplier of urea to the engineered forest products sector which uses ureabased resins; and
  - b. the only local producer of diesel emissions treatment solution (GoClear), essential for the transport sector diesel fleet both now and with future biodiesel.



<sup>&</sup>lt;sup>6</sup> Data Source: AgResearch Ltd

- 31. Our manufacturing site operates to New Zealand's strict environmental regulations including carbon pricing. It also enables product innovations in the manufacturing process to reduce on-farm emissions (e.g. nitrification inhibitors).
- The Kapuni Plant located in South Taranaki is a key regional employer directly employing
  130 full time workers and indirectly supporting a further 170 indirect roles<sup>7</sup>.

#### 0.3 Our Urea Production Emissions Reduction Opportunities

- 33. Ballance has technical support agreements in place with the world's leading Ammonia and Urea technology companies and is closely engaged with technology advancements. We are confident global demand for low emission ammonia and urea technology will support a substantive reduction in domestic urea emissions. Globally the nitrogen industry is seeking to:
  - a. replace natural gas for high temperature process heat with renewable electricity;
  - b. replace feed natural gas with electrolytic hydrogen and CO<sub>2</sub> recovered from on-site emission sources or CO<sub>2</sub> sourced externally, and
  - c. replace grid-sourced electricity and on-site cogeneration electricity with dedicated renewable electricity supply.
- 34. All of these technical options are available to Ballance. We have the technical solutions, we have the know-how, and we have the willingness to invest. The remaining hurdles include securing an internationally competitive cost of renewable electricity and having a predictable policy environment to invest the hundreds of millions of dollars required.
- 35. The Climate Change Commission highlights the challenge of opportunity b. above replacement of feed natural gas with electrolytic hydrogen, in its Final Advice to Government:<sup>8</sup>



<sup>&</sup>lt;sup>7</sup> Venture Taranaki - The Wealth beneath our feet

<sup>&</sup>lt;sup>8</sup> Ināia tonu nei : a low emissions future for Aotearoa, Supporting Evidence chapter 5, pages 16-17.

| Option                                     | Opportunities and challenges   |
|--|--|
| Hydrogen as a<br>feedstock or<br>reductant | Petrochemical (methanol and urea) production and steelmaking are<br>domestic industries which are technically compatible with hydrogen-<br>based production.   |
|  |  |
|  | Hydrogen is an intermediate chemical in the standard production<br>process for petrochemicals. Petrochemicals are currently produced in<br>an emissions intensive process utilising natural gas as a fuel and<br>feedstock. A green hydrogen supply would eliminate this stage of the<br>process and decarbonise petrochemical production. |
|  | For urea production, this change in feedstock cost is equivalent to an emissions reduction cost of \$250 per tCO2.   |
|  | Additional costs are incurred compared to current urea production<br>because a source of pure carbon dioxide is needed Co-location near<br>the Kapuni Gas Treatment Plant could provide a source of pure carbon<br>dioxide to be used in conjunction with green hydrogen.  |

36. Full replacement of natural gas is therefore on a longer time horizon than our other decarbonization options, however it is included at a smaller scale within the first national emissions budget period (2022-2025). Details of the planned stepwise investment program for the Kapuni site are set out below.

#### 0.3.1 Our Kapuni Emissions Reduction Plan

- 37. For the Kapuni site, a series of project investments are planned as described in Table 1, with those due for completion by 2030 shown schematically in Figure 3. These projects are all viewed to be technologically proven at the scale proposed.
- 38. These changes will allow Kapuni to reduce manufacturing (fuel + electricity) emissions intensity by 83%, with the resulting urea being produced with a world leading low emissions profile.



| Years         | ERP<br>Budget | Project                                       | Description  | Project<br>Capital<br>Cost |
|---------------|---------------|---|--|----------------------------|
| 2023-<br>2024 | 1             | Waste Heat<br>Recovery<br>Te Ata -<br>Hiringa | Generation of 28barg steam through the recovery of compressor waste heat. This project displaces the combustion of 210TJ pa of natural gas (12kt of CO <sub>2</sub> e).<br>The Te Ata – Ballance/Hiringa project will supply the Kapuni site with renewable electricity and green (electrolytic) hydrogen (refer Attachment 2). The green hydrogen will be added to the hydrogen produced via steam methane reforming and used to produce urea with a lower carbon footprint | \$17m                      |
| 2024-<br>2026 | 1             | Electric<br>Ammonia<br>Plant Stage<br>1       | An additional 125tpd of ammonia capacity is<br>added, supported by electrolytic Hydrogen.<br>CO <sub>2</sub> is imported from a 3 <sup>rd</sup> party gas treatment<br>waste stream and is combined with the<br>ammonia to produce 'net zero' emission urea  | \$230m *                   |
| 2026-<br>2028 | 2             | Electric<br>Ammonia<br>Plant Stage<br>2       | Second stage of renewable electricity<br>available increasing utilization of the electric<br>ammonia plant to 80%  |                            |
| 2028-<br>2030 | 2             | Electric<br>Reformer                          | The electric reformer replaces the use of<br>natural gas for process heat in the Steam<br>Methane Reformer. Natural Gas consumption<br>is reduced by 1.4PJ pa  | \$50m *                    |
| 2030-<br>2040 | 3+            | Waste Heat<br>CO <sub>2</sub><br>Recovery     | Recovery of $CO_2$ from the syn gas compressor<br>engines. Recovered $CO_2$ will be used in the<br>production of Urea, backing out the need for<br>imported 3 <sup>rd</sup> party $CO_2$ .   | >\$20m                     |

\* Capital Cost excludes investment in renewable electricity generation (by others).











- 39. The initial small-scale introduction of electrolytic hydrogen from renewable generation will provide valuable knowledge and operating experience for potential 2040+ large scale application of electrolytic hydrogen at the Kapuni plant.
- 40. The resultant emissions intensity, emissions and energy requirements (electricity and natural gas) from implementing the Kapuni emissions reduction plan are set out in Figures 4-6.
  - Figure 4 highlights an 83% reduction in urea manufacturing (fuel + electricity) emissions intensity, from 0.89 tCO2e / t urea to 0.17 tCO2e / t urea (refer Box 1 above for commentary on the irreducible feed emissions).
  - b. Figure 5 shows on an absolute emissions basis, a 182 ktCO2e p.a. reduction in manufacturing emissions, despite there being an 86kt p.a. (33%) increase in urea production.
  - c. Figure 6 shows the changes in site energy requirements:
    - a 20% reduction in natural gas requirements from 7 P p.a. to 5.6 PJ p.a. Excluding the natural gas for Feed, this represents a 36% reduction in natural gas energy requirements.
    - ii. Electricity (baseload equivalent) demand increases from 4.3MWh (0.15PJ) p.a. to 100 MWh (3.2 PJ) p.a.









Figure 5 - Kapuni ERP Urea Emissions and Production





Figure 6 - Kapuni ERP Energy Requirements and Production

41. With all projects implemented, the Kapuni ERP would substantively reduce the emissions intensity of Kapuni urea below current import levels as shown in Figure 6 below. For this reason, increased domestic production has a global emissions benefit.







#### 0.3.2 Our South Island Opportunity

- 42. Ballance may have the opportunity to produce the lowest emissions for urea in the world in the South Island.
- 43. This opportunity would take over 760 thousand tonnes of CO<sub>2</sub>e out of the manufacture of fertilisers used by NZ farmers and growers. It would be a key initiative allowing NZ farmers to continue to be the lowest emissions producers of food globally. In addition, it will ensure the security of supply of nitrogen for South Island farmers from a NZ source.
- 44. It would also create employment opportunities in the Southland economy.

### 0.4 Impact on the National Emissions Budgets of the Ballance Emission Reduction Plan

45. Based on the Kapuni ERP, with project implementation at the mid-points of the periods stated, our estimate of the impact across the first three national emissions reduction plan budget periods is shown in Table 2.



#### Table 2 - Ballance Kapuni ERP Estimated Impact on Budget Periods Compared to Current Emissions

| Budget Period | Emissions Abated in Period (ktCO <sub>2</sub> e) |
|---------------|--|
| 2022-25       | 67   |
| 2026-30       | 84   |
| 2031-35       | 572  |

46. Further reductions require additional renewable electrolytic "green" hydrogen or a greening of the natural gas through hydrogen or biogas injection. Both may be feasible in the later budget periods.

### **Submission Points**

- 47. Our key submission points are provided below.
- 48. To assist the analysis of our submission, Attachment 5 provides Ballance's response and/or cross referencing to those consultation questions relevant to the body of our submission.

#### 0.5 The need for a Predictable and Stable Policy Environment

49. In Climate Change Minister Hon James Shaw's speech of 7 July 2021 titled "It falls to us" -Principles for guiding the Emissions Reduction Plan" he stated:

The transition to a low carbon economy will require innovation at every level.

To make that happen, government has a role to play in addressing the inherent uncertainty of change.

And that is why the fifth guiding principle shaping the Emissions Reduction Plan, is to provide business with a policy environment that is predictable and stable over the long term, providing the level of certainty they need to invest in low carbon solutions.

Our Government was elected on a promise of climate action.

So it is our job as a Government to create the conditions where people, businesses, and communities can invest in reducing emissions.

If we get it right, we have the potential to unleash a period of unprecedented innovation and opportunity for New Zealand business which will be the catalyst for growth and shared prosperity for decades to come.<sup>9</sup>

Ballance fully endorses this principle and the associated statements.

50. Ballance has the technology, the know-how, and the willingness to invest. We strongly believe the opportunities set out in our own plan are economically realizable and environmentally rational with the right policy environment.



https://www.beehive.govt.nz/speech/it-falls-us-principles-guiding-emissions-reduction-plan

- 51. In the last 2-3 years, we have responded in good faith to multiple, often narrow focused, Government consultations on climate change and related energy policy proposals. We have become increasingly concerned that the environment for investment in climate mitigation risks is being undermined through policy decisions which do not recognise the bigger picture.
- 52. This is especially the case for our hard-to-abate industry where investment payback times are significantly longer than emission budget periods and there are significant technology challenges at scale.

#### 0.6 The Role of the Government's Emission Reduction Plan

53. We therefore strongly recommend that the Emissions Reduction Plan should not just be an accounting exercise focused on the emissions budgets. It should also incorporate the recommendations of the Climate Change Commission to develop an energy strategy and a hard-to-abate industry strategy, and wider policy considerations.

#### 0.7 Recognition of Hard to Abate Industries

- 54. Ballance agrees with the Climate Change Commission's recognition that urea manufacture is a "Hard to Abate Industry". We also support Government and business working together on developing appropriate policies and strategy to enable our and other hard to abate industries to realise their decarbonisation visions while continuing to help the New Zealand economy thrive.
- 55. The scale of investments for the Kapuni site plan and the longer-term opportunities to fully decarbonize urea production warrants the co-development of a Ballance specific hard-to-abate industry strategy. This approach should support investment and mitigate the risk of emission reduction opportunities being lost through policy measures due to a lack of understanding or inadvertent decisions.

#### 0.8 The need for an Energy Strategy

- 56. Our Kapuni Emissions Reduction Plan is currently mapped out to 2030-2040. Over this period we will have ongoing but reducing requirements for natural gas and increasing requirements for electricity, either self-generated or ex-grid.
- 57. Investment in emissions abatement technology requires a secure and affordable energy supply. Disruption of the natural gas market and increased early reliance on renewable electricity generation and distribution investment will have ramifications on the viability of our transition journey and future operation. Noting the material and stepwise nature of the planned projects, we seek direct engagement to map out these energy requirements in a national energy strategy.

#### 0.9 Predictability of Industrial Allocation Settings Supports Investment

58. Urea manufacturing is an Emissions Intensive Trade Exposed (EITE) activity. Ballance recently submitted its comprehensive views on the Government's Reforming Industrial



Allocation discussion document. Our focus was on ensuring that policy to address emission leakage provides a durable and predictable foundation for business investment to contribute to reducing domestic and global emissions.

- 59. Although excluded from the consultation scope, final decisions on industrial allocation reform must take full account of policy decisions on the level of assistance, electricity allocation factor (EAF), auction price controls and the current and expected carbon price associated with the Government's emissions reduction plan.
- 60. Ballance supported a periodic reassessment of allocative baseline on the current policy basis using data from more recent years. However, reassessments of allocation baselines too frequently will undermine the investment returns for emissions reductions projects. For this reason we recommended reassessment should be no more frequent than every 10 years.
- 61. We cautioned against a simplistic repeat of the eligibility test for activities that may be close to thresholds; criteria that focus on cost impacts or international precedents should be considered.
- 62. Should the Government proceed with carbon border adjustment mechanism (CBAM) or other parallel or replacement policies to industrial allocation, it must provide assurance that the same level of protection as that available under industrial allocation will be provided. Otherwise emission reduction investments will be stalled.
- 63. For large hard-to-abate industry, options to provide investment certainty should be considered, including upfront lumpsum allocation or exemption of ETS costs, for the project investment return period.

#### 0.10 The Importance of a Stable and Durable NZ ETS

64. Ballance stresses the importance of a stable and durable New Zealand Emissions Trading Scheme (NZ ETS). The impacts of a steeply rising carbon price, accelerated reduction of industrial allocation, or allocation policy resets, could mean our decarbonisation vision is not realised. The hard to abate industry strategy, national energy strategy, and NZ ETS settings must be considered in unison.

#### 0.11 Facilitated Fast-Track Development Process

65. An increased carbon price on its own is not enough to deliver emissions reductions. To meet the challenge of climate change in Aotearoa New Zealand we need clear policy signals that are bipartisan, including Resource Management Act (RMA) accelerated consenting and innovation support.

#### 0.12 Making an Equitable Transition

66. Ballance fully supports the Government's commitment to a transition that reaches our targets while minimising disruption and seizing the opportunities the transition will bring.


67. Support for businesses such as Ballance to lower emissions through predictable policy settings is preferable to loss of manufacturing, job losses and emission leakage.

ENDS



### Attachment 1 – Company Overview

- Ballance Agri-Nutrients (Ballance) is a farmer-owned co-operative with over 17,000 shareholders and approximately 800 staff throughout New Zealand. With turnover of nearly \$1 billion and total assets of \$760m, Ballance is a top 40 New Zealand owned company that distributes over \$60m per annum to its farmer shareholders.
- 2. Ballance owns and operates super-phosphate manufacturing plants located in Tauranga and Invercargill, and New Zealand's only ammonia-urea manufacturing plant located at Kapuni, South Taranaki. Ballance also owns and operates SuperAir, an agricultural aviation company with high precision technology SpreadSmart, and SealesWinslow, a high-performance compound feed manufacturer. Ballance has a network of fertiliser storage and dispatch facilities across the country.
- 3. Our Purpose is: Together, Creating The Best Soil and Food On Earth. To deliver on this, our Ballance With Nature program aims to support the farming sector to sustainably and profitably produce and supply food domestically and internationally, so the NZ farmer can leave our natural environment in better condition for generations to come. This Purpose is supported by seven principles: healthy soil; nutrient efficiency; cleaner air; healthy water; animal care; native biodiversity; and resource utilisation.
- 4. Ballance has a proud history of innovating to support these seven principles. We were the first in New Zealand to coat urea with our SustaiN product, reducing on-farm nitrogen losses by more than 10%. Our SurePhos product is a first in the world in single super phosphates (SSP), reducing phosphate losses by up to 75% compared to regular SSP. The Ballance joint venture project with Hiringa at Kapuni is a first in NZ that will produce green hydrogen directly from wind-generated electricity for delivery of green hydrogen and greener ammonia to the NZ economy.
- 5. We endeavour to create more innovation and our in-house industrial engineering and science expertise actively engages with others with global expertise in low emissions nutrient manufacturing to create opportunities for a co-development pathway on new technologies. The demand for low emissions nutrients solutions is growing significantly from our owners as well as from the NZ public.
- 6. Our approach to innovation is also well demonstrated by our Sustainable Food and Fibres Futures (SFFF) Program, which is focused on improving water quality, reducing GHG emissions and decreasing agricultural chemical use. Our SFFF Program has 12 discrete projects to deliver on these important objectives. We estimate that annual benefits in excess \$1 billion could be achieved by Year 10 of the SFFF for the sheep and beef, dairy, forestry, horticulture, and arable sectors.
- 7. Complementing this, Ballance is a proud sponsor of the Ballance Farm Environment Awards (BFEA). These awards have been running for over 25 years and have created an alumnus of farmers who are leaders in their fields and who are regularly requested to meet with



Government to discuss the future of farming in NZ. In addition, positive stories of our world leading farmers are spreading far and wide across rural and urban audiences.

- 8. The learnings from the BFEA Awards and decades of scientific research are passed on to over 20,000 farmers and growers via our Science Extension Team. This team offers significant expertise and advice to farmers and helps them deliver on their productivity goals while achieving a lighter environmental footprint.
- 9. We also have a dedicated Farm Sustainability Services Team that helps farmers develop tailored sustainable nutrient management plans, ensuring efficient performance from the land, whilst leaving it in good condition for future generations. This team also help farmers meet their compliance requirements and respond to rapidly changing regulations. As well as supporting New Zealand farmers, Ballance also supplies products to a range of domestic applications:
  - Urea, is used in the production of formaldehyde based resins, a key ingredient in the wood processing sector for the manufacture of particleboard and MDF.
  - An extremely high purity urea solution is used to produce GoClear at the Kapuni plant. GoClear is an exhaust system additive and scrubbing agent that reduces harmful nitrogen oxide (NOx) emissions from diesel engines, breaking the NOx down into harmless water vapour and nitrogen gas. GoClear has been supplied to the largest vehicle fleets in New Zealand for many years.
  - Other products important to non-farming industries including: ammonia; sulphuric acid used in the dairy, pulp and paper, and power generation industries; and liquid alum and hydrofluorosilicic acid, both used in drinking water treatment processes.
- 10. Ballance places a strong emphasis on delivering value to its farmer shareholders and on the use of the best science to inform and deliver sustainable nutrient management, including supporting improvements in on-farm environmental performance.

#### Ballance's Engagement in Climate Change Policy Development

- 11. Ballance has taken an active role in the development of domestic climate change policy, dating from the original industry voluntary agreements of the late 1990's through to the current New Zealand Emissions Trading Scheme (NZ ETS).
- 12. We have contributed to the "Zero Carbon debate" through submissions to the Productivity Commission on its *Low-emissions economy* study and to the Ministry for the Environment and subsequently to the Environment Committee on the Zero Carbon Bill.
- 13. Earlier this year we submitted to the Climate Change Commission on their draft advice to the Government on action required to reach net-zero long-lived greenhouse gas emissions by 2050 while achieving a just and equitable transition.
- 14. Subsequently, we have made submissions on:



- a. the "Phasing out fossil fuels in process heat" consultation document, dated 20 May 2021.
- b. the "Reforming industrial allocation in the New Zealand Emissions Trading Scheme" consultation document dated 8 July 2021.
- c. the "Designing a governance framework for the New Zealand Emissions Trading Scheme" consultation document dated 8 July 2021.

#### Ballance's Exposure to Greenhouse Gas Reduction Policy

- 15. Urea manufacture currently requires natural gas for high temperature process heat and feedstock for hydrogen production through steam methane reforming, an intermediate step to producing ammonia and subsequently urea.
- 16. Ballance supports the intent to reduce greenhouse gas emissions in Aotearoa New Zealand while our operations are directly impacted by the New Zealand Emissions Trading Scheme (NZ ETS) and emissions reductions policy:
  - The Kapuni urea manufacturing facility is an Emissions Intense Trade Exposed (EITE) industry competing against urea imports. The main import volumes are from Malaysia and Saudi Arabia, neither of which place a price on carbon. Attachment 3 shows global urea capacity;
  - As a manufacturer and importer of urea, Ballance is a mandatory NZ ETS participant (within the Agriculture Sector), for synthetic fertiliser containing nitrogen.
  - All Ballance operations are exposed to NZ ETS costs passed through by energy suppliers and second round impacts including freight costs and inflationary pressure.

#### Kapuni Green Hydrogen

- 17. On 20 June 2019, Ballance Agri-Nutrients and Hiringa Energy confirmed a Joint Development Agreement for a major clean-tech project in Taranaki to produce 'green' hydrogen using renewable energy. The project cost is \$60 million.
- 18. Under the Joint Development Agreement, the two companies are planning the construction of four large wind turbines (with a total capacity of 24 MW) to supply 100% renewable electricity directly to the Kapuni site, and also power electrolysers (electrolysis plant) to produce high-purity hydrogen – for feedstock into the ammonia-urea plant or for supply as 'zero-emission' transport fuel.
- 19. This current trial will reduce emissions by 20,000t CO<sub>2</sub> annually from both electricity generation and process gas emissions. The project will determine the viability for subsequent increases in green ammonia and urea manufacture, while reducing the requirement for natural gas or substituting imported urea (reducing global emissions).

- 20. The Ballance Hiringa JV project highlights the "absorptive capacity" foundation of existing assets and skills that can be leveraged to transform the economy to a low emissions future. Attachment 1 provides more information on this project.
- 21. Further investment will be needed to continue our journey towards fully decarbonising our manufacturing process and our planned progressive transition would be over a series of investment projects as technology develops and its price falls. The capital cost estimate to fully decarbonise hydrogen production and integrate this with the downstream ammonia and urea steps is \$500 million, a very significant long-term investment (greater than 15 years).
- 22. The viability of this project, together with the ongoing viability of the operation will rely on clear, consistent policy signals and a stable gas market to meet the fuel and feedstock requirements in the interim.
- 23. While we recognise the need to reduce New Zealand's reliance on fossil fuels, any transition needs to be appropriately timed to facilitate achievable milestones. A requirement to reduce fossil fuel inputs should not undermine an operation's viability while it is on the road to transition or prevent a transition from occurring.



### Attachment 2 – Kapuni "green" hydrogen project seen as catalyst for NZ market (media release)

#### 20 June 2019

Ballance Agri-Nutrients and Hiringa Energy today confirmed a Joint Development Agreement for a major clean-tech project in Taranaki to produce 'green' hydrogen using renewable energy.

The \$50 million showcase project of Taranaki's new energy future will be based at Ballance's Kapuni ammonia-urea plant and is seen as a catalyst for the development of a sustainable green hydrogen market in New Zealand to fuel heavy transport – as fleet operators push to reduce carbon emissions ( $C0_2$ -e) in response to Zero Carbon legislative change.

#### INDUSTRIAL-SCALE HYDROGEN PRODUCTION

The renewable hydrogen hub will be a perfect marriage of industrial scale renewable energy and hydrogen production, providing a model for other industrial operations and future decarbonisation of New Zealand's agricultural inputs by substituting green hydrogen to replace the current natural gas (CH<sub>4</sub>) feedstock.

Ballance Agri-Nutrients CEO, Mark Wynne, says "this flagship green hydrogen project is a collaboration of national significance" – bringing together world-leading hydrogen technology and the specialist technical capabilities in the region, to leverage existing infrastructure for the benefit of New Zealand.

"Working with Hiringa we have a truly unique opportunity to create a hydrogen ecosystem at Kapuni – powered by renewable energy – that we can grow and develop as a template for New Zealand's leadership in what is an exciting space globally."

Andrew Clennett, CEO of Hiringa Energy, described the project as "an innovative concept developed locally, which takes advantage of our 'built' and natural resources".

"This will create a foundation for a hydrogen market in New Zealand so that we can start more aggressively taking carbon and other pollutants out of heavy transport and develop other high-value uses for green hydrogen in our economy as part of our low-emissions future. We are delighted to be working in true partnership with Ballance Agri-Nutrients on such an enabling project"

#### POTENTIAL FOR ZERO-CARBON TRANSPORT

The Kapuni Green Hydrogen production alone is expected to generate sufficient 'green' hydrogen to supply up to 6,000 cars, or 300 buses and trucks per year.

Mr Clennett says the project has national significance and is linked with Hiringa's development of a hydrogen supply and refuelling network in New Zealand to enable use of hydrogen fuel cell

24 November 2021



technology for zero-emission heavy transport – displacing imported fossil fuels with home-grown clean energy.

This is a key regional project outlined in the H2 Taranaki Roadmap launched by the Prime Minister, Jacinda Ardern, and Minister of Energy & Resources, Dr Megan Woods, in March this year.

This comprehensive report into the opportunities presented by hydrogen for Taranaki and New Zealand's energy future is one of the first under *Tapuae Roa: Make Way for Taranaki – Taranaki's Regional Development Strategy*, and was developed in partnership between Hiringa Energy, New Plymouth District Council and Venture Taranaki, with support from the Provincial Growth Fund. It also supports the Draft Taranaki 2050 Roadmap that is building upon the Tapuae Roa Strategy.

#### HARNESSING THE POWER OF WIND

Under the Joint Development Agreement the two companies are planning the construction of up to four large wind turbines (with a total capacity of 16MW) to supply 100% renewable electricity directly to the Kapuni site, and also power electrolysers (electrolysis plant) to produce high-purity hydrogen – for feedstock into the ammonia-urea plant or for supply as 'zero-emission' transport fuel.

Mr Wynne says this enables Ballance Kapuni to use almost entirely renewable electricity for its electricity needs, and hydrogen can be produced with wind-power that exceeds the manufacturing plant's baseload electricity requirements.

The project is a key step for the energy sector transition in Taranaki, with the region already having two large-scale hydrogen users – Methanex and Ballance Kapuni that can potentially provide baseload demand for green hydrogen. The existing core competency in hydrogen production and use at Ballance's Kapuni site is an excellent platform, Mr Wynne says.

#### GREEN JOBS AND GREEN NUTRIENTS

Ballance's Kapuni plant is one of the largest employers in South Taranaki, contributing hundreds of millions of dollars to the regional economy in wages and contracts work.

The plant relies on natural gas for its feedstock so this project represents a way to not only future-proof a large employer but also provide additional employment opportunities, during construction and as the hydrogen market develops.

While the hydrogen fuel-cell market develops, the supply can be fully utilised in the Kapuni Ammonia-Urea plant to manufacture 'green' nitrogen fertilisers that will have an extremely low emissions profile. Mr Wynne says, "We'll be able to offer a new choice of nitrogen fertiliser for New Zealand farmers who have sustainability front-of-mind".

The manufacture of green ammonia-urea will offset up to 12,000 tonnes of carbon emissions and avoid the import of 7,000 tonnes of urea from the Middle East and Asia. Production of green urea would eliminate the equivalent amount of  $CO_2$  as taking 2,600 cars off the road.

24 November 2021



"We're thrilled to be able to bring this opportunity forward for our farmer-shareholders, for Taranaki, and for New Zealand – to create a renewable hydrogen energy hub that could enable deep cuts in emissions from our heavy transport fleets and also produce an alternative green nutrient source to help keep New Zealand growing," Mr Wynne says.

Ballance and Hiringa are looking forward to sharing the plans with Government stakeholders, lwi and other local community and commercial stakeholders – along with discussions with potential hydrogen customers, to help realise this "tangible example of 'Just Transition' for the Taranaki region into a new energy future".

#### QUICK FACTS – GREEN HYDROGEN

- Green hydrogen is produced from renewable electricity and water, through the process of electrolysis (producing hydrogen and water).
- Hydrogen has the highest energy content of any common fuel (by weight). A hydrogen fuel cell car can refuel in 3-5 minutes and travel up to a range of 600-800km.
- When used in a fuel cell hydrogen can enable zero-emission transportation (and recombines hydrogen and oxygen to make water).
- For commercial and heavy transport hydrogen is a zero-emission solution that enables high availability, payloads and range.
- Green hydrogen is complementary to the electrification of transport in New Zealand, with the potential to reduce emissions from heavy transport, industrial processes and chemical production.

#### For further information:

BALLANCE AGRI-NUTRIENTS

#### HIRINGA ENERGY

CEO – Andrew Clennett



### Attachment 3 – Kapuni Ammonia–Urea Plant Details

Ballance owns and operates New Zealand's only ammonia-urea plant located on a 32.4 hectare site at Kapuni in South Taranaki.

Using some 7 petajoules (PJ) of natural gas, the plant produces 150,000 tonnes of ammonia per year, over 99% of which is converted to 265,000 tonnes a year of premium grade granular urea. The high quality granular urea product is used as a nitrogen-rich fertiliser in the agricultural, horticultural and forestry sectors, and as a component in the manufacture of other products (primarily resins).

The Kapuni plant production meets approximately one third of New Zealand's demand for urea. Remaining demand is met through imports sourced primarily from the Middle East, Far East and China. Ballance is therefore in direct competition against countries with less stringent international climate change obligations.

The company makes a significant economic contribution to the local economy and employs 130 permanent staff and 17 full time contractors.

#### The Kapuni Ammonia-Urea Plant

- <caption>
- 1) The location and scale of Kapuni site is show below (Figure 1).

- The plant, which commenced operation in 1983, was built to make use of the Government's "take or pay" gas contract arrangements at the nearby gas fields.
- The plant was designed from the outset as a single site integrated ammonia-urea plant, ammonia being an intermediate product in the conversion of natural gas to urea.
- 4) The plant was one of a series of "Think Big" projects instigated by the Muldoon led National Government.<sup>10</sup> It was envisaged that the plant would help New Zealand's balance of



<sup>&</sup>lt;sup>10</sup> Other Think Big projects included the Methanol plant at Waitara, the Synthetic-petrol plant at Motunui, Expansion of the Marsden Point Oil Refinery, Expansion of the New Zealand Steel plant at Glenbrook, Electrification of the Main

payments by exporting urea, however New Zealand's current demand of 850,000 tonnes now exceeds plant production resulting in all sales being domestic.

- 5) The plant was revamped in 1996 to increase production and reduce energy use through closer heat integration of the ammonia and urea sections of the plant.
- 6) The process is described in detail in Attachment 1 and is summarised in Figures 2-3 below, which show the primary chemical reactions and the location in the plant of the activities.



- There is a small intermediate storage capacity of 450 tonnes ammonia (1 days production if full). This is primarily to allow sequential (ammonia then urea) start up of the plant and to provide a buffer for any minor upsets.
- Carbon dioxide production is 195,000 tonnes per annum.
  - o There is no intermediate storage of carbon dioxide.

Trunk Railway between Te Rapa and Palmerston North, A third reduction line at the Tiwai Point aluminium smelter, The Clyde Dam on the Clutha River.



- As an integrated ammonia-urea plant, there is common infrastructure which yield energy efficiency gains and cost savings:
  - Cogen (Electricity and Steam)
  - Steam mains + heat integration
  - Demineralised water for boilers
  - Clarified water + cooling water system
  - Control Room & Services
  - Effluent Treatment
  - Utility air supply



### Attachment 4: Global Urea Capacity

## **Global Urea Capacity: Top 15 Ranking**



Source: International Fertilizer Association World Urea Capacities 2021 Summary Report



### Attachment 5 – Response to Specific Consultation Questions

The table below provides Ballance's response and/or cross referencing to those consultation questions relevant to the body of our submission.

| Consultation Question   | Ballance Response & Submission Section<br>References  |
|---|---|
| 1. Do you agree that<br>the emissions reduction plan should be<br>guided by a set of principles? If so, are the<br>five principles set out above the correct<br>ones? Please explain why or why not.  | We support the five guiding principles.<br>We strongly endorse the fifth principle<br>Refer Section:<br>3.1 The need for a Predictable and Stable<br>Policy Environment   |
| <ol> <li>How can we enable further private sector<br/>action to reduce emissions and help achieve<br/>a productive, sustainable and inclusive<br/>economy? In particular, what key barriers<br/>could we remove to support<br/>decarbonisation?</li> <li>In addition to the actions already<br/>committed to and the proposed actions in this<br/>document, what further measures could be<br/>used to help close the gap?</li> <li>Are there any other views you wish to<br/>share in relation to the Transition Pathway?</li> </ol> | <ul> <li>Refer Sections:</li> <li>3.2 The Role of the Government's Emission<br/>Reduction Plan</li> <li>3.3 Recognition of Hard to Abate Industries</li> <li>3.4 The need for an Energy Strategy</li> <li>3.5 Predictability of Industrial Allocation<br/>Settings Supports Investment</li> <li>3.6 The Importance of a Stable and Durable<br/>NZ ETS</li> <li>3.7 Facilitated Fast-Track Development<br/>Process</li> </ul>  |
| <ul> <li>13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?</li> <li>14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission, and any other objectives that you think should be included in an Equitable Transitions Strategy?</li> </ul>   | Refer Section:<br>3.8 Making an Equitable Transition  |
| <ul> <li>21. In addition to the Climate Change<br/>Commission monitoring and reporting on<br/>progress, what other measures are needed<br/>to ensure government is held accountable?</li> <li>22. How can new ways of working together,<br/>like mission-oriented innovation, help meet</li> </ul>  | We support top-down national level sector<br>strategies for the hard to abate sectors and<br>the national energy strategy. Refer Sections:<br>3.3 Recognition of Hard to Abate Industries<br>3.4 The need for an Energy Strategy<br>Monitoring and reporting on progress of<br>these strategies is appropriate to ensure<br>long-term implications of policy proposals are<br>properly recognised and considered.<br>This would assist in addressing the current<br>fragmented nature of energy and climate |
| our ambitious goals for a fair and inclusive<br>society and a productive, sustainable and<br>climate resilient economy?<br>23. Is there anything else you wish to share<br>in relation to government accountability and   |   |
| coordination?   | change policy making.   |



| 24. What are the main barriers or gaps that<br>affect the flow of private capital into low-<br>emissions investment in Aotearoa?  | <ul> <li>Policy uncertainty, particularly with respect to<br/>energy pricing, emission pricing and<br/>industrial allocation currently undermines<br/>significant future investments in<br/>decarbonisation.</li> <li>Refer Sections:</li> <li>3.3 Recognition of Hard to Abate Industries</li> <li>3.4 The need for an Energy Strategy</li> <li>3.5 Predictability of Industrial Allocation<br/>Settings Supports Investment</li> <li>3.6 The Importance of a Stable and Durable<br/>NZ ETS</li> </ul>   |
|---|---|
| 26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?  | <ul> <li>Full decarbonisation will require significantly greater funding.</li> <li>We suggest this should be aimed at material cost effective emissions abatement projects.</li> <li>Refer Sections:</li> <li>3.3 Recognition of Hard to Abate Industries</li> <li>3.5 Predictability of Industrial Allocation Settings Supports Investment</li> </ul>  |
| 28. Do you have sufficient information on<br>future emissions price paths to inform your<br>investment decisions?   | <ul> <li>Recent NZU price rises and regulated increases in the auction price controls, in conjunction with changes to industrial allocation represents a fast-rising cost impost on Ballance.</li> <li>This represents a withdrawal of cash-flow at a time when investment is required.</li> <li>Further "tinkering" with ETS settings further undermines investment confidence (refer Q31).</li> <li>Refer Sections:</li> <li>3.5 Predictability of Industrial Allocation Settings Supports Investment</li> <li>3.6 The Importance of a Stable and Durable NZ ETS</li> </ul> |
| 29. What emissions price are you factoring into your investment decisions?  | We use a range of price scenarios.  |
| 30. Do you agree the treatment of forestry in<br>the NZ ETS should not result in a delay, or<br>reduction of effort, in reducing gross<br>emissions in other sectors of the economy?                                  | We support the position of the Climate<br>Change Commission which endorsed the<br>possibility of forestry offsets being required<br>for hard to abate industry to achieve net Zero<br>manufacturing.  |
| 31. What are your views on the options<br>presented above to constrain forestry inside<br>the NZ ETS? What does the Government<br>need to consider when assessing options?<br>What unintended consequences do we need | We oppose attempting to control forestry<br>through "tinkering" amendments to the NZ<br>ETS.<br>Policies to constrain ETS forestry conversion<br>should be in legislation and processes under<br>the Resource Management Act 1991 (and its  |



| to consider to ensure we do not<br>unnecessarily restrict forest planting  | successor) and the Local Government Act 2002.   |
|--|---|
| 33. In addition to resource management   | Refer Section:  |
| reform, what changes should we prioritise to<br>ensure our planning system enables<br>emissions reductions across sectors? This<br>could include partnerships, emissions impact<br>quantification for planning decisions,<br>improving data and evidence, expectations<br>for crown entities, enabling local government<br>to make decisions to reduce emissions | <ul> <li>2 Ballance's Emissions Reduction Plans<br/>and specifically Figure 6 - Kapuni ERP<br/>Energy Requirements and Production<br/>This highlights our ongoing but reducing<br/>requirement for natural gas and increasing<br/>requirement for affordable renewable<br/>electricity.</li> <li>Resource management reform should have<br/>regard to the unintended consequences of<br/>undermining decarbonisation through the</li> </ul> |
|  | unplanned constraints on natural gas,<br>restrictions on technology options and<br>inadequate support for abundant, reliable<br>affordable renewable electricity.   |
|  | We also highlight the importance of a<br>hydrogen strategy and the development of<br>clear national policy supporting the<br>development of hydrogen generation and<br>supply systems.  |
| <ul> <li>58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?</li> <li>59. What areas require clear signalling to set a pathway for transition</li> </ul>  | Refer Section:<br>3.4 The need for an Energy Strategy   |
| 60. What level of ambition would you like to<br>see Government adopt, as we consider the<br>Commission's proposal for a renewable<br>energy target?  | Any renewable energy target should be<br>determined following on analysis of all<br>indirect impacts of the target, including on<br>electricity price.  |
|  | We caution against a speculative target that<br>is determined without a full economic<br>analysis and which could drive poor<br>investment decisions.   |
| 61. What are your views on the outcomes,<br>scope, measures to manage distributional<br>impacts, timeframes and approach that<br>should be considered to develop a plan for<br>managing the phase out of fossil gas?   | Refer Section:<br>2 Ballance's Emissions Reduction Plans<br>and specifically Figure 6 - Kapuni ERP<br>Energy Requirements and Production<br>This highlights our ongoing but reducing<br>requirement for natural gas   |
| 62. How can work underway to decarbonise<br>the industrial sector be brought together, and<br>how would this make it easier to meet<br>emissions budgets and ensure an equitable<br>transition?  | <ul> <li>Refer Sections:</li> <li>3.2 The Role of the Government's Emission<br/>Reduction Plan</li> <li>3.3 Recognition of Hard to Abate Industries</li> <li>3.4 The need for an Energy Strategy</li> </ul>   |



| 63. Are there any issues, challenges and<br>opportunities for decarbonising the industrial<br>sector that the Government should consider,<br>that are not covered by existing work or the<br>Commission's recommendations? | <ul> <li>Refer Sections:</li> <li>3.5 Predictability of Industrial Allocation<br/>Settings Supports Investment</li> <li>3.6 The Importance of a Stable and Durable<br/>NZ ETS</li> <li>3.7 Facilitated Fast-Track Development<br/>Process</li> </ul> |
|--|--|
|--|--|





# Te hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future

### **Emissions Reduction Plan Consultation**

from

**Banks Peninsula Conservation Trust (BPCT)** 



# BANKS PENINSULA Conservation trust

Submission to: Te hau mārohi ki anamata : Transitioning to a low-emissions and climateresilient future Emissions Reduction Plan Consultation

On behalf of: Banks Peninsula Conservation Trust (BPCT)

Contact details: Maree Burnett General Manager, BPCT

Penny Carnaby Chair, BPCT

Banks Peninsula Conservation Trust PO Box 146 Tai Tapu 6340

If there are public hearings, we wish to appear in person to support this submission.

#### **Table of contents**

- 1. Overview
- 2. Desired outcomes from the consultation process
- 3. About the Banks Peninsula Conservation Trust
- 4. Achieving more by working together
- 5. Response to consultation questions

#### **1.Overview**

The Banks Peninsula Conservation Trust (BPCT) is pleased to have an opportunity to submit to *Te hau mārohi ki anamata : Transitioning to a low-emissions and climate-resilient future Emissions Reduction Plan* consultation document.

Banks Peninsula, Te Pātaka o Rākaihautū is a very special part of Aotearoa with unique landscape, soils, extensive coastline and rich biodiversity. For over 20 years BPCT has had the privilege of working alongside landowners on the Peninsula, many of whom are committed to balancing the need to make a living from their farms alongside their wish to protect and nurture the naturally occurring native vegetation and other associated biodiversity on their properties. In 2003 the Minister of Conservation granted the Banks Peninsula Conservation Trust covenanting authority status under Section 77(1) of the Reserves Act 1997, making the Trust the first, and we understand still the only, non-government organisation to place covenants on to land titles since the QEII National Trust began 40 years ago.

It is through this covenanting authority that the Trust can support landowners on Banks Peninsula to protect and enhance the biodiversity on their land.

The Banks Peninsula community is justifiably proud of the many examples where natural native vegetation is recovering, regenerating, and thriving. However, under the current emissions framework in NZ, there are disincentives for landowners who want to protect and restore indigenous biodiversity on their properties. The problem is that the current ETS incentivises the planting of monocultures (eg. pines) which are damaging to soils and landscapes, particularly on the steep terrain of Banks Peninsula, rather than incentivising the protection of native vegetation.

#### 2. Desired outcomes from the consultation process

- Improved opportunities for carbon sequestration and for biodiversity gains through native forest restoration on Banks Peninsula.
- The Banks Peninsula community is viewed to be an exemplar in New Zealand for adopting a collaborative approach to native forest regeneration, biodiversity gains and nature-based tourism.
- An urgent change to the current Emissions Trading Scheme (ETS) to make it easier for landowners to get ETS credits on areas of native forest regeneration on their land.
- Other financial compensation processes (outside the ETS) such as biodiversity credits or other government mechanisms which support landowners to protect areas which may never meet ETS criteria, but which have significant biodiversity and carbon sequestration values.
- A move away from incentivising (through the ETS) the planting of monocultures (pines) on landscapes and soils prone to erosion, general land and water degradation; resulting in loss of biodiversity and the spread of wilding pines.
- A revision of the look up tables in the current ETS to strengthen MPI's understanding of the carbon sequestration potential of native vegetation (including carbon below the ground in the form of roots, soil microbiota and soil carbon).
- A national pest eradication policy position on ungulates (deer, pigs, and goats) be developed, costed, and incorporated into existing predator free Aotearoa projects including the Pest Free Banks Peninsula programme.
- Financial support (for fencing, weed and pest control, monitoring and management plans) to establish more conservation covenants on Banks Peninsula, particularly areas with significant biodiversity values.

- Engagement with the **2050 Ecological Vison for Banks Peninsula** <u>www.bpct.org.nz/bpct-2050-ecological-vision</u> and consideration of this as an exemplar for biodiversity recovery and carbon sequestration.
- Long term planning at a government level to ensure the long-term sustainability of Pest free Aotearoa initiatives including Pest Free Banks Peninsula <u>https://pestfreebankspeninsula.org.nz</u>

#### 2.1 Support for other statements/submissions

BPCT supports the following submissions/statements:

- The submission from the Banks Peninsula Native Forest/ Climate Change Group (BPNFCC)
- He Pou a Rangi/Climate Change Commission Recommendation 25

"To establish a long-term carbon sink through a comprehensive national programme to incentivise the reversion and planting of new native forests to maintain net zero long-lived greenhouse gas emissions beyond 2050

Target of 25,0000 ha additional native forest per annum"

(N.B there is potential for Banks Peninsula alone to contribute 25,000ha or more of permanent native forest so this target, in our opinion, lacks ambition).

• **Parliamentary Commissioner for the Environment, report**. November 2021. *Space invaders: A review of how New Zealand manages weeds that threaten native ecosystems.* 

"Rampaging weeds pose a deadly threat to our native ecosystems by smothering, outcompeting and preventing regeneration of native plants." Simon Upton Nov.2021

• Forest and Bird submission statements relating to:

Expanding browsing animal and browsing pest control

Protecting and restoring existing carbon sinks

Incentivising native habitat restoration

- Beef and Lamb NZ submission statement relating to:
  - Much higher rate of native plantings instead of exotic carbon forests
  - The need for plans for limiting carbon farming and managing the location of these forests

The need to address wholesale conversion of farms for carbon farming by changing Overseas Investment Office (OIO) rules.

• Dame Anne Salmon Newsroom November 5<sup>th</sup> 2021.

https://www.newsroom.co.nz/cop26-anne-salmond-tiakina-te-taiao-take-care-of-the-livingworld?utm\_source=Friends+of+the+Newsroom&utm\_campaign=4f0b245b16-Daily+Briefing+05.11.2021&utm\_medium=email&utm\_term=0\_71de5c4b35-4f0b245b16-97933760

"The ETS has been set up in ways that privilege short-lived, highly flammable, exotic monoculture tree plantations in New Zealand, an industry that is largely owned overseas" Dame Anne Salmond November 2021.

• **The Native Forest Coalition** policy statement and recommendations on native forests November 23<sup>rd</sup> 2021:

"Highlighting the urgent need to halt the rapid proliferation of pine plantations driven by high carbon prices and short-term policy settings. The Coalition strongly favours prioritising native forestry over exotics and argues that before seeking offshore carbon forest credits, government should invest in native forests, for their myriad of benefits, at home."

#### 3. About the Banks Peninsula Conservation Trust

The Banks Peninsula Conservation Trust (BPCT) was formed in 2001. It is a non-profit charitable organisation that works with landowners, agencies, runanga, sponsors, and the wider community to promote the conservation and enhancement of indigenous biodiversity and sustainable land management on Banks Peninsula. **The Trust was formed as a community-driven organisation to facilitate the protection of biodiversity on private land using voluntary methods.** This was following a mediated settlement of landowner appeals to the Environment Court regarding the then Banks Peninsula District Council's decisions to impose rules about biodiversity protection on private land. **In 2003 the Minister of Conservation granted BPCT covenanting authority status under Section 77(1) of the Reserves Act 1997.** Recognised nationally by the Ministry for the Environment and the Department of Conservation with the 2017 Green Ribbon Award for Community Leadership, and with a national award for Community-led Biosecurity from the Ministry for Primary Industries, the Trust is known as a highly successful, community-driven conservation organisation and a leader in biodiversity protection.

The wide-spread community support for our conservation efforts is the result of:

(a) working with landowners in a non-challenging and empowering way through voluntary protection methods; and

(b) operating in a collaborative way that engages the community and provides the linkages between community aspirations for biodiversity protection and enhancement, partnership and funding support from the corporate sector and the local authorities and agencies with a mandate for conservation work. The Trust has a reputation for taking a strategic approach to biodiversity management and protection and is recognised as being efficient and effective with the resources available.

#### 4. Achieving more by working together

One of the signatures of the work of BPCT is the desire to bring together agencies, runanga, aligned organisations/trusts and individual landowners, all who are united in helping

enhance and restore the unique indigenous biodiversity of Banks Peninsula. The BPCT believes we can achieve more to enhance biodiversity values by working together with like-minded individuals and organisations.

#### We recommend that:

Existing collaborations initiated by BPCT be leveraged, built on, and used as exemplars in delivering the Emissions Reduction Plan.

#### **Collaborations include**:

- The 2050 Ecological Vison for Banks Peninsula www.bpct.org.nz/bpct-2050ecological-vision which brings together a range of aligned organisations and agencies (CCC/ECAN/DOC) and landowners to support the eight Ecological Goals set out in this Vision. The Vision delivers an aligned, joined-up voice for all the outstanding activities and projects which enhance and restore the unique indigenous biodiversity of Banks Peninsula.
- Ecosystem restoration <a href="https://www.bpct.org.nz/our-projects">https://www.bpct.org.nz/our-projects</a> Supporting private landowners to protect and enhance high-value indigenous biodiversity through establishment and ongoing ecological management support for conservation covenants, as well as a range of community education programmes on biodiversity enhancement and protection.
- **Te Kākahu Kahukura** <u>https://www.tekakahu.org.nz/</u> is a landscape scale project on the Southern Port Hills to restore a thriving and resilient indigenous forest supporting an abundance of native birds and invertebrates. This taonga for Otautahi-Christchurch is being realised through a BPCT-led collaboration of landowners, residents, not-for-profit organisations, Ngāti Wheke, and the agencies (CCC/ECAN/DOC/SDC).
- Pest Free Banks Peninsula <u>https://pestfreebankspeninsula.org.nz</u>
   This is a collaborative programme involving 14 partner organisations, targeted to
   protect and enhance biodiversity on the Peninsula through the widespread removal
   of animal pests (herbivores as well as predators). Involved parties are
   CCC/ECAN/DOC/SDC, iwi, aligned organisations, and landowners on Banks Peninsula.
   This will increase carbon storage by removing key impediments to natural
   regeneration.
- The Wildside Project <a href="https://www.bpct.org.nz/our-projects?id=30">https://www.bpct.org.nz/our-projects?id=30</a> The Wildside Project is a large-scale collaboration of landowners, Christchurch City Council, Department of Conservation, Environment Canterbury, and BPCT for the protection of a variety of endemic, threatened, and iconic species. The Wildside covers 13,500ha and focuses on habitat protection, with over 25% of the Wildside held in private covenants and public reserves.

#### 5. Response to consultation questions

#### 5.1 Transition pathway

#### We support the following statements:

- The plan aims to support nature-based solutions that are good for both the climate and biodiversity pg. 19
- An effective emissions price through a strengthened New Zealand Emissions Trading Scheme (NZ ETS) pg. 21
- Helping nature to thrive and supporting the wellbeing of communities and people pg. 21
- We need to address the climate crisis in a way that also helps address the biodiversity crisis. There is an opportunity to help our indigenous ecosystems thrive in a way that sequesters carbon and builds resilience to the impacts of climate change pg. 22

#### 5.2 Question 4

How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

(See BPCT answers to Questions 106-112).

#### Question 5.3 106. Forestry buffer

# Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

New Zealand's native forests are a natural asset which, if protected and cared for, have the dual benefit of sequestering more carbon (over a longer period than pine plantations) as well as achieving consequential biodiversity gains. It seems an obvious buffer to support in the case of other areas of the economy under-delivering. They would also serve to increase the ambition of our future international commitments, with additional benefits to New Zealanders in the form of increased biodiversity and potential for nature-related employment.

While we currently have many landowners on Banks Peninsula wanting to covenant areas of regenerating native forest, the current application of the ETS disincentivises this direction and instead incentivises the replacement of naturally occurring vegetation with monocultures (mainly pines). This is damaging to the land, the soil, and the natural ecosystems. It really doesn't make sense.

However, if the financial incentives for protecting and facilitating regenerating native vegetation are more favourable for landowners, their preference would be to protect the areas of natural significance on their property which are sometimes more marginal for farming. Currently the BPCT has 19 unfunded applications for covenants with a further 40 expressions of interest. This tells us that there is a real desire by landowners to ensure areas of special natural significance are protected in perpetuity with appropriate monitoring and management plans, which include weed and pest control. There must however be

appropriate financial support for landowners to cover the fencing, surveying and ongoing management costs, and preferably an income stream which recognises the loss of grazing.

We strongly believe we must support restoring and increasing the permanent indigenous forest in New Zealand in preference to purchasing carbon credits abroad to offset our emissions.

BPCT also agrees with the BPNFCC comment:

"New Zealand has a low population relative to its land mass making it more feasible to increase our permanent native forest cover than in more densely populated countries. We also have an entire eco-system of unique species and one of the highest rates of extinction in the world. These provide two compelling reasons to increase our permanent native forest cover. "

# **5.4 Question 107 What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?**

While many landowners on Banks Peninsula are already actively managing their productive farming land alongside their desire to protect areas of special natural significance, they are, in most cases, doing this with little or no financial incentive. It is largely a system of goodwill matched with a passion to protect the unique biodiversity and natural values on their land. Where possible, BPCT sources financial support for covenanting, in particular for fencing, surveying, monitoring, and pest and weed control. However, funding available to support these activities is limited.

The most useful Government intervention would be to make it much easier for landowners to be eligible for ETS returns for areas of native forests on their land. The current system is biased towards monocultures and plantations. If landowners were incentivised to covenant areas of native forest regeneration, then, as we are currently experiencing, there can be employment opportunities for ongoing pest and weed control, fencing and biodiversity monitoring. For example, the Pest Free Banks Peninsula programme is currently employing 14 mostly local staff. It would also open new opportunities for a range of nature education and tourism initiatives such as the Banks Track and Pohatu Penguin Tours, which currently employ local people and help some otherwise marginal farms become more profitable.

The other Government intervention which would have a meaningful impact on carbon sequestration would be to accelerate a national pest eradication policy position on feral ungulates (deer, pigs, and goats). For several years BPCT has led (in collaboration with agencies) a very successful feral goat eradication programme on Banks Peninsula. Expert hunting crews have been contracted to support this work. We predict that Banks Peninsula will be feral goat free ahead of the 2024 target. While this programme has been successful, we are increasingly concerned about the growing impact of feral pigs and feral deer on the Peninsula. These browsing animals (along with possums) are causing significant damage to native vegetation as well as impacting negatively on recovering eco-systems. A nationally co-ordinated pest eradication policy on feral ungulates would present further employment opportunities on Banks Peninsula and would dovetail well with the current Pest Free Banks Peninsula Programme.

#### 5.5 Question 108 Making native forest economically viable

## What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land

The BPCT supports the comments in the BPNFCC submission on Question 108 relating to carbon price and recognises natural regeneration as optimal for landscape scale native afforestation. The current carbon price of approximately \$65 per unit would already make it economically viable to establish and maintain native forest on private land; however, the difficulty of registering this land for ETS credits means that this carbon price is seldom realised by landowners.

We also agree with BPNFCC that there is a need to:

## "Incentivise regeneration as a land use through urgently improving the ETS, afforestation grants and introducing biodiversity credits"

And that:

"Natural regeneration should be the principal method by which the Emissions Reduction Plan aims to achieve new native forest at the scale required."

**5.5.1** The BPCT supports the introduction of Biodiversity Credits as another way of making it economically viable to establish and maintain native forest through planting or regeneration on private land.

Biodiversity Credits are a useful method of assisting landowners with income on areas of their land that is not yet eligible for carbon credits. It is a powerful incentive and stepping-stone on land that may in the future, meet ETS criteria.

An additional important benefit of Biodiversity Credits may be for smaller areas of native vegetation not eligible for the ETS, but which have high and often unique biodiversity values, such as rocky outcrops and cliff faces with rare and endangered plant species endemic to Banks Peninsula.

# 5.6 Question 109 What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

In any prioritisation of forests and forest systems **consideration should be given to landscape features, topography, soil profile** etc. There are many areas of NZ, for example Banks Peninsula and Tarāwhiti where the steep hills, and soil structure make it mostly unsuitable for exotic plantations. Where this has happened there has often been significant erosion, water degradation and scarring of the landscape, so the principle of "right tree in the right place" is pertinent here. In contrast these two areas are ideal for naturally regenerating vegetation. Where nature has been left to regenerate naturally, we have seen how quickly the biodiversity values increase and eco-systems recover.

The transition from exotic to native should be encouraged and incentivised where detrimental environmental outcomes are likely to be too high.

While there is some general concern that too much productive farming land throughout NZ is being transitioned to exotic species plantations, the Government could play a useful role in some high level economic and land use planning so that an acceptable balance is reached.

### **5.5.1** *Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?*

It is important that we prioritise permanent native forest systems in NZ which protect and enhance our indigenous biodiversity and eco-systems. There seems no reason to give preference to permanent exotic forests in the NZ context.

Soil ecosystems are also an important component of carbon sequestration. Soil ecosystems associated with naturally established indigenous forests are considerably healthier and more carbon rich than those with monoculture plantations of exotic species.

### 5.5.2. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

There needs to be a policy change which prevents the current loophole provided by the Overseas Investment Office to allow overseas investors to purchase land expressly for exotic forestry. This is a two-edged sword resulting in a reduction of overseas earnings together with a negative impact on rural communities.

#### 5.6 Question 110 Supporting afforestation for wood products

### If we used more wood and wood residues from our forests to replace high-emitting products and energy sources, would you support more afforestation? Why or why not?

The BPCT does not have a view on this question, except to note that much of Banks Peninsula is unsuitable for forestry activities due to terrain steepness, sediment runoff, access and roading difficulties, as well as wilding pine spread risk.

#### 5.7 Question 111 Roles for government and private sector:

### a. central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment

Regional and Local Government need to play a role in ensuring that afforestation is well planned with environmental impacts carefully assessed for site-specific characteristics and any negative impacts managed.

Central Government has a role to play in making necessary changes to the ETS which make it easier to assess the carbon sequestration impact of native forests as well as exotic forests.

## *b.* the private sector in influencing the location and scale of afforestation? Please provide reasons for your answer.

The BPCT does not have a view on this question.

#### 5.8 Question 112 Pest control

## *Pests are a risk to carbon sequestration and storage in new, regenerating, and existing forest. How could the Government support pest control/management?*

The Government should broaden its Predator Free 2050 programme to be a Pest Free 2050. There is an urgent need to develop a **national pest eradication policy position on feral ungulates** (deer, pigs, and goats). This policy needs to be costed and incorporated into existing the Predator Free 2050 programme including the Pest Free Banks Peninsula programme.

**Pest Free Banks Peninsula** <u>https://pestfreebankspeninsula.org.nz</u> This is a collaborative programme involving 14 partner organisations, targeted to protect and enhance biodiversity on the Peninsula through the widespread removal of animal pests. Involving CCC/ECAN/DOC/SDC, iwi, aligned organisations, and landowners on Banks Peninsula. This programme will increase carbon storage by removing key impediments to natural regeneration.

The key challenge for the Pest Free Banks Peninsula project is to ensure that there is sustainable funding for the duration of the project.



#### **Big Street Bikers**

#### Submission to the Emissions Reduction Plan Discussion Document

#### November 2021

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#### 1. About Big Street Bikers

As a nation, we spend on average more time stuck in gridlock, than we do on annual leave. The social harm costs are diabolical, let alone the carbon emissions. However, there is a solution. It's electric and it's affordable for everyday kiwis.

## Electric bikes are vehicles for kindness. Kinder on your mental health. Kinder on your community. Kinder on our planet. And... kinder on your wallet.

Big Street Bikers is a New Zealand based and Māori investment backed social enterprise developing the physical and social infrastructure to allow a massive uptake of electric bicycle travel in Aotearoa. We do this by making the eBike commute more accessible, affordable and desirable; specifically providing ride-to-own eBike subscriptions and secure bike parking and charging facilities linked to an outdoor public broadcast channel for mode shift and other public good messages.

#### 2. Summary

We make a number of points in this submission to the Government on the October 2021 Emissions Reduction Plan Discussion Document. This submission focuses on the transport section of the document and our key points cover:

1. The importance of mode shift as the path to emissions reduction and the vital role that eBikes could play in this regard. The Discussion Document is heading in the right direction on this point, but should be significantly strengthened.

2. The importance of transport equity in the transition to eBikes as a mode of transport and a consideration of trialling a publicly funded low-cost eBike subscription for communities affected by transport inequity. The Discussion Document contains encouraging material on this point that could be expanded on further.

3. The importance of widespread, publicly accessible secure parking and charging facilities for electric bicycles if we are to realise their value in terms of mode shift and emissions reduction. The Discussion Document could be strengthened on this point.

4. The need for a greater focus from the government on strengthening the rules and planning tools that will make cycling safer. There is some encouraging material in the Discussion Document on this point that could be strengthened.

5. A proposal for a dedicated Commission to deliver the necessary mode shift towards active transport that will be required for the country to meet its emissions targets. We believe the Emissions Reduction Plan could be significantly strengthened on this point.

These points are laid out below and we would be pleased to discuss them further.

#### 3. Points in the Discussion Document that we strongly support:

There are a number of points in the transport chapter of the Discussion Document that we strongly support. These are highlighted below.

We strongly support the commitments to:

- "reallocating significant amounts of road/street space to rapidly deliver more dedicated bus lanes and safe separated bike/scooter lanes"
- "completing connected cycle networks"
- "substantially increase funding for cycling and walking improvements"
- "provide support for local authorities to boost capabilities in designing and delivering cycling/scooting and walking improvements at speed."
- "explore dedicated active transport funding and/or education programmes to schools, including funding for school bike-leasing schemes or biking education classes."
- "give extra support to implement community-based and Maori-led schemes to make low-emission vehicles (including e-bikes) more accessible – for example, social leasing, shared mobility schemes run by community/iwi/hapu, rent-to-buy or gradual payments, car and bike sharing."
- "invest in widening the evidence base to support the equitable transition to a zero-carbon transport system, and ensure these policies and measures are effective in the Aotearoa context. A better understanding of travel accessibility, preferences and behaviour across all user groups and modes will aid the development, assessment and modelling of future policies. The evidence base will support the monitoring and evaluation of the future state, to understand the impact of policies. This base will be integral to shaping current and future policies."
- "signal what the transport workforce might look like, and work with industries to plan for transitions."

We strongly support the commitments in the first budget period to:

- "require transport emissions impact assessments for urban developments and factor these into planning decisions, with requirements to avoid, minimise and mitigate transport emissions impacts"

- "ensure that emissions reduction (through better urban form and the provision of transport infrastructure) is enabled through the reform of the resource management system, particularly the proposed Spatial Planning Act."
- "make regulatory changes to streamline public consultation requirements and make it easier for councils to trial street/road changes that support travel by public transport, walking, and cycling, including low-traffic neighbourhoods."
- "Work with Waka Kotahi to rapidly change streets nationwide that promote multimodal transport."
- "improve public transport and active travel networks in low-income or low-socioeconomic areas (where appropriate, based on population size and distribution), and improving safety for walking and cycling"
- "monitor and respond to the impacts of transport policy actions on the accessibility and affordability of transport, particularly for lower income households and communities"
- "improve access and connectivity for people in social housing, investing in public and active transport and supporting car share, carpool, and shared bike/scooter schemes."

#### 4. Points in the Discussion Document that should be strengthened:

There are a number of points that we believe should be strengthened or added to the final Emissions Reduction Plan. These are laid out below.

#### 4.1. EMISSIONS REDUCTION VIA MODE SHIFT

The path to reducing transport emissions will have to come via mode shift rather than a continuation of private cars as the dominant mode of travel. Both the Ministry of Transport's Green Paper and the Climate Commission's final advice acknowledge this. One of the four transport targets in the Discussion Document is to "reduce vehicle kilometres travelled (VKT) by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities." This target should be more ambitious and should be at least 40% at a national level, in line with Ministry of Transport advice on what is needed by 2035 to meet the country's emission reduction targets. There is also a strong argument for the plan to include specific regional targets, developed with local councils and mana whenua to ensure that our largest cities are doing as much of the heavy lifting to meet these targets as possible.

Whether they are electric or not, cars take up far too much city space, crowding other far more efficient, healthier and lower emission forms of travel like walking, cycling and micro mobility as well as public transport modes such as buses on priority lanes and light rail.

This principle of "mode shift" as the primary mechanism for transport emissions reduction has been widely accepted by planners internationally and around Aotearoa New Zealand. The UK government for example has recognised that, with the right infrastructure surrounding it, cycling can be a form of mass transit. In New Zealand, national and regional transport agencies have embedded mode shift targets within their strategic planning documents for this reason. For the cost of one EV, ten cars can be replaced with ten eBikes for daily commutes. In its final advice to the government, the Climate Change Commission noted that:

"At the moment, transport planning and funding is largely centred around private vehicle use. Of the approximately \$4 billion spent on land transport in 2017, only around \$600 million was spent on public transport, and less than \$100 million on walking and cycling.

The Commission went on to recommend that:

"there should be a large increase in the proportion of funding spent on public and active mobility".

The Discussion Document on emissions reduction proposes to:

"substantially increase funding for cycling and walking improvements."

Any emissions reduction strategy for the transport sector will prioritise mode shift away from cars over electrification of the existing congestion and inequity produced by private vehicles.

Mode shift must happen at a speed and scale that require a major overhaul of our transport system and underpinning legal framework. That means clear and unequivocal national direction to councils, government departments and civil contractors. Given the slow speed of transition to date, it is likely that changes to legislation are the only way to ensure this national direction.

#### Key recommendations:

- Legislative change requiring government agencies, councils and civil contractors to change the type of transport infrastructure they provide, prioritising healthy low carbon options over roads.
- Legislative and policy change, including through changes to the Public Transport Operating Model, to greatly increase the amount of financial assistance provided to councils for public transport, as recommended by the Climate Change Commission.
- Legislative and policy change to encourage the provision of lower fares and discounted or free fares for disadvantaged groups, as recommended by the Climate Change Commission.
- Legislative and policy changes directing planning rules to enable installation of cycleways and discouraging private vehicle use in city centres through the use of pricing, driving and parking restrictions.
- Prioritise government public communications spending to make mode shift behavioural change more desirable.
- Provide visible, digital wayfinding to make mode shift and in particular cycling the more convenient option.

#### 4.2. TRANSPORT EQUITY: EBIKE SUBSIDIES AND SUBSCRIPTIONS

International evidence suggests that government subsidies for eBikes are the highest value intervention that can be made to reduce transport emissions. This could be in the form of direct subsidies, tax rebates, or - as proposed by Big Street Bikers - in the form of subsidised low cost or free weekly / monthly subscriptions to eBikes. Subsidised subscriptions would provide major benefits in terms of transport equity by eliminating the high upfront cost of an eBike and providing a flexible, ongoing low cost option that is cheaper than existing transport budgets related to private vehicles including fuel, insurance and other on road costs.

The Ministry of Transport's Green Paper on transport emissions reduction recognises the role of eBikes in reducing emissions. The Green Paper notes that:

"E-bikes are growing in popularity and have potential to improve efficiency, sustainability and wellbeing within Aotearoa's urban transport systems. E-bikes enable people to cycle more quickly, with less effort and sweating, and to cover longer distances."

"The key benefit of E-bikes is that they broaden the pool of people who would cycle if there was safe and connected infrastructure to do so in Aotearoa. Therefore, creating networks of safe, separated cycleways is likely to be the best way to harness the potential of E- bikes in Aotearoa."

The Emissions Reduction Plan Discussion Document proposes to:

"explore dedicated active transport funding and/or education programmes to schools, including funding for school bike-leasing schemes or biking education classes."

"give extra support to implement community-based and Maori-led schemes to make low-emission vehicles (including e-bikes) more accessible – for example, social leasing, shared mobility schemes run by community/iwi/hapu, rent-to-buy or gradual payments, car and bike sharing."

Big Street Bikers agrees with these recommendations and analysis and would two key additional points:

- 1) Secure parking and charging infrastructure must be included in the concept of "safe and connected infrastructure" in order to realise the benefits of eBikes for mode shift; and,
- 2) Transport equity solutions such as the "Two-wheeled public transport" proposal for targeted subsidies that allow for low cost eBike subscriptions in disadvantaged communities will be necessary to spread the benefits of eBike uptake equitably. This proposal is described further below.

The Emissions Reduction Plan Discussion Document as well as the Climate Change Commission's final advice recognise the importance of transport equity around eBikes, with the Climate Change Commission suggesting that "support to purchase an EV (electric vehicle) or electric bike could help." The US for example is currently considering a tax rebate on eBike purchases of 30% of the purchase price up to \$1,500 USD. However, the upfront cost of eBikes will still be a major barrier, meaning subsidies for eBike purchase could perpetuate transport inequity.

Big Street Bikers has been working with Kōkiri Marae and Healthy Families Hutt Valley to develop a transport equity pilot in Wainuiomata called "Two-wheeled Public Transport". This programme would provide subsidised eBike subscriptions (either low cost or free) to people on a six month trial basis with a view to providing an ongoing ride-to-own subscription for people that wish to continue using the eBike. This means that for \$5 or less per week, people would have their own eBike, unlocking transport opportunities that previously would have been out of reach. This is a core transport equity question and schemes like this will be central to a just transition, which is a priority for the government.

In addition, Big Street Bikers is currently creating Village Share schemes in housing developments including with Kainga Ora - Otautahi Community Housing Trust. A further partnership between Kāinga Ora, Waka Kotahi and Big Street Bikers could unlock further gains in transport equity and mode shift.

The Fringe Benefit Tax has prevented some NZ employers from providing subsidised eBikes to their employees. Removing the Fringe Benefit Tax from eBikes provided by employers to their employees is also a simple action that would have a significant impact on mode shift.

#### Key recommendations:

- Consider funding the proposed "Two-wheeled Public Transport" pilot programme. This programme, in development with partners in Wainuiomata and the Hutt Valley, would trial the provision of subsidised, either low-cost or free, eBike subscriptions to people experiencing transport inequity.
- Consider other government funded programmes to provide eBike subsidies and / or eBike share schemes for people around the country.
- Encourage businesses and organisations to implement salary based programs that enable employees to purchase eBikes and unlock affordable, carbon free transport options.
- Remove the Fringe Benefit Tax from eBikes purchased by employers.
- Consider tax subsidies and rebates for eBikes to encourage cycling uptake.

#### 4.3. INFRASTRUCTURE INCLUDING SECURE BIKE PARKING AND CHARGING

Along with removing the financial barriers that prevent people from switching to electric bikes for many of their journeys, building the physical infrastructure to make cycling safe, convenient and practical is essential. Central government and local councils are working on cycle ways and shared paths around the country and these efforts, while too slow and often cumbersome, are beginning to bear fruit. These efforts need to be scaled up urgently and we encourage the Ministry of Transport to acknowledge this urgency. Beyond the provision of safe cycling infrastructure, an area with less focus is the provision of secure bike parking for electric bicycles. Given the value of an electric bicycle, secure bike parking at key destinations is of critical importance if we want to shift people out of cars for short journeys to the shops, the library or the doctors, to play sports and exercise or to see a movie or have a meal. In the future, with a projected uptake in electric bicycles, secure bike parking should also provide power so people can charge their bikes while they are locked up. Big Street Bikers provides Locky Docks for this purpose in Auckland, Wellington and Christchurch, with a network of 30 bike parking stations currently in its pilot stage.

Locky Docks provide secure parking, charging and wayfinding for eBikes, bikes and scooters. They can integrate with existing Hop cards, Snapper cards and Metro cards. Locky Docks make cycling safer, secure and much more convenient. This innovation has been funded privately alongside Mercury Energy and EECA and is a free public service available for anyone to use at any time. Many of the Locky Docks are also equipped with a digital screen display providing wayfinding alongside a public broadcast channel for government agencies and councils to promote healthy lifestyles, community engagement, safe streets and zero carbon transport.

#### Key recommendations:

- Prioritise secure bike parking infrastructure to make cycling more convenient and secure.
- Make bike parking compulsory for any new commercial builds in urban centres.
- Use modern secure bike parking with digital data tracking to enable oversight over daily usage statistics and trends.

#### 4.4. STRENGTHENING RULES AND PLANNING TOOLS FOR SAFE CYCLING

The Climate Commission's final advice as well as the Emissions Reduction Plan Discussion Document both recognise the importance of cycling as a key active mode that, if scaled up, will help reduce transport emissions.

Any government direction on transport emission reduction should also recognise the importance of strengthening the rules that protect people who are cycling. One example of such rule changes is to signal that in a collision between a cyclist and a motorist, the motorist is by default responsible. This is the law in the Netherlands and contributes to the dramatic increased safety for people cycling in that country. There are a number of other safety rules that could contribute to safer cycling and, as a result, accelerate mode shift and, consequently, emissions reduction.

In addition to safety rules, planning tools such as rezoning certain suburban streets as 'cycle priority streets' is a useful mode shift intervention. This rezoning has been very successful in Vancouver and can be done without the infrastructure spend and time required to build separated bike lanes. In Auckland for example, suburbs within 10km of the central city (e.g. Grey Lynn, Mt Albert, Sandringham, Mt Eden), could be easy quick wins for this, sending a strong visible signal to communities to help activate the behaviour change required for mode shift and transport emissions reduction. Government direction that makes it easier for local

councils to replace car parks with safe cycling and walking infrastructure would also have a big impact.

The Emissions Reduction Plan Discussion Document proposes to:

- "require transport emissions impact assessments for urban developments and factor these into planning decisions, with requirements to avoid, minimise and mitigate transport emissions impacts"
- "ensure that emissions reduction (through better urban form and the provision of transport infrastructure) is enabled through the reform of the resource management system, particularly the proposed Spatial Planning Act."
- "make regulatory changes to streamline public consultation requirements and make it easier for councils to trial street/road changes that support travel by public transport, walking, and cycling, including low-traffic neighbourhoods."

We agree with these recommendations and have further recommendations below.

#### Key Recommendations:

- Encourage councils to rezone key urban areas as 'cycle priority streets' to activate behaviour change.
- Remove regulatory barriers to enable communities to easily switch car parking to cycle parking.
- Implement a public mobility path wayfinding system to encourage uptake of mode shift and make existing mobility paths more visible to everyone.

#### 4.5. ACTIVE TRANSPORT COMMISSION

We support the commitment in the Discussion Document to:

"deliver a strategy to boost cycling, and a strategy to boost walking (recognising that cycling and walking are separate modes)".

We believe this strategy should lead to a standalone entity such as a national Active Transport Commission that would have its own dedicated funding and statutory powers. More detail on this is provided below.

In order to rapidly scale up delivery on key transport interventions we propose the establishment of a dedicated Active Transport Commission with its own ring-fenced budget. The purpose of this Commission is to deliver a mode-shift that sees 7% of urban trips being made by cycling or walking, by 2025. The required commitment to mode shift from Waka Kotahi and local councils is being held back by legacy roading budgets, entrenched culture and longstanding relationships that prioritise private vehicles and roads over the significantly higher return on investment from active transport. We cannot expect different transport outcomes by using the same transport system. We need a new system.

We've run out of time to turn the tanker by 1 degree, we need to create a new vehicle to lead the way for the required behaviour change. In the past we have seen success from other commissions — Smokefree NZ and the supporting legislation, are an example of how a dedicated vehicle for behaviour change has been successful in our country. Big Street Bikers is currently in discussions with other groups about a potential proposal for an Active Transport Commission.

Potential features and functions of this Commission could include:

- Advising on legislation that enables safer and more attractive conditions for active transport (e.g. laws that make it safer for cyclists of all ages similar to those in the Netherlands).
- Allocating a dedicated budget to building infrastructure and delivering related projects to support walking, cycling and active transport modes. This budget could be drawn from and / or complement existing budgets within Waka Kotahi, EECA, Ministry of Health and Green Investment Fund.
- Deliver infrastructure, innovations, behaviour change campaigns and activations for active transport modes.
- Untethering and focusing the wealth of talent, currently siloed with limited powers, within councils and government agencies. This talent ranges from the health sector, urbanism and active transport.
- Facilitating and supporting active transport mode-shift programmes in government agencies, councils, businesses, organisations and community groups.
- Providing advice and reports to the Minister of Transport and the Climate Commission.

#### CONCLUSION

We recommend that the Government take into account the following points in relation to reducing transport emissions as part of its final Emissions Reduction Plan:

- 1. The importance of mode shift as a higher order strategic priority than transitioning the private car fleet to electric vehicles and the need for more ambitious targets on increasing mode shift and reducing vehicle kilometres travelled.
- 2. The major positive impact that public subsidies for electric bicycles could have on accelerating people switching their journeys from cars to active modes, thereby reducing emissions and the importance of targeting such subsidies in ways that increase transport equity.
- 3. The importance of widespread, publicly accessible secure parking and charging facilities for electric bicycles as a key enabler of this transition from car journeys to active transport journeys.
- 4. The need for a greater focus from the government on the critical importance of strengthening the rules and planning tools that will make cycling safer.
- 5. A dedicated commission for delivering the necessary mode shift to active transport required for us to meet our emissions targets.

Evidence indicates that supporting the swift and equitable uptake of eBikes is one of the best value for money interventions available to us to rapidly scale zero emissions transport. As well
as emissions reduction it will deliver multiple benefits to physical health and mental wellbeing, economic prosperity and productivity, and community development. Supporting the equitable uptake of eBikes should be in the highest order of priorities for the Ministry of Transport and the government as a whole as the transport sector works to meet its targets in the final National Emissions Reduction Plan.

Thank you for consideration of this submission and we would welcome the opportunity to discuss these ideas with you further at your convenience.

#### ENDS



# Emissions Reduction Plan Discussion Document Submission Guide

# **Bike Auckland**

Bike Auckland is a registered charity based in Auckland with a mission statement to make Auckland a better place for anyone who rides a bike.

Bike Auckland as an organisation possess considerable expert transport knowledge and represents a diverse membership and subscriber base. As such, this submission related primarily to transportation in general, rather than exclusively bicycle use.

Consent is granted for this submission to be hosted, referenced or published in the public interest as it relates to Te hau mārohi ki anamata - the Emissions Reduction Plan Discussion Document.

# Answers to specific questions

### Transition pathway

# 5. Are there any other views you wish to share in relation to the Transition Pathway?

The transition pathway must be evidence based and set in line with limiting global warming to 1.5 degrees. This means that the pathway should be based on the latest IPCC evidence for action to limit warming to 1.5 degrees, with peer-reviewed emissions budgets applicable to New Zealand's contribution.

Presently, advice from the Climate Change Commission may not meet this evidence-based criteria, and needs to be comprehensively reviewed.

Any transition pathway must prioritise reducing emissions locally, rather than exporting emissions through foriegn offsetting or creative accounting. The Emissions Reduction Plan must involve actually reducing emissions first and foremost, with offsetting of emissions utilised only as a back-stop measure where other plans became unworkable due to unforeseen circumstances.

### Helping sectors adapt:

6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

Diversifying our transport system away from our present private-motor vehicle dominated model will add considerable resilience to the transport network. A highly multi-modal system - where a high proportion of trips (or passenger kilometres travelled) are taken by active and public transport modes - will by it's nature include a high level of resilience to adverse climate events.

In the occurrence of necessary adaptation or adverse climatic events, such as flooding or erosion, provision of active transport infrastructure for walking and cycling can be completed more quickly and affordably than re-constructing or modifying a transport system which is dependent on much heavier and more complex forms of transport. As such, enabling most trips to be completed by walking and cycling allows for considerably greater reflexivity when it comes to climate adaptation.

# 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

Over-reliance on private motor vehicles puts the transport system at unnecessary risk of disruption from even minor and likely common events, such as surface flooding, where disruption to one part of a city's roading network can rapidly lead to delays across the entire network. The ongoing costs of a private motor vehicle based transport system will continue to increase as further climate mitigation is required. This will divert funding from other necessary climate adaptation measures, significantly limiting our capacity to respond. Alternatively, if lower cost transport systems - such as a largely bicycle-based urban transport network - are implemented, adaptation and maintenance will be considerably lower-cost, freeing up funding for other initiatives.

A private vehicle based transport system conflicts with the need to intensify urban environments - recognised as one of the most important steps to reduce emissions - as it quickly becomes impossible to service urban transport needs with private motor vehicles as populations increase. Increasing population density in urban environments requires a shift in transportation systems design, including recognising that high levels of motor vehicle ownership, use and resource allocation (including physical space) are direct barriers to the adoption of more efficient, affordable and climate-ready options.

As such, existing planned roading projects should be comprehensively reviewed for cost-effectiveness considering the reduced vehicle use target, and future road expansion should be severely restricted. Current budgets should be prioritised towards active and public transport modes.

A suggested policy position is for approximately 10% of all transport spending to go towards walking projects, a further 10% to go exclusively towards cycling and micromobility projects, and ambitious targets to be set for public transport network coverage and frequency.

### Making an equitable transition

# 16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

As transportation constitutes the largest portion of household emissions, this will need to be of primary importance when addressing household emissions.

The simplest, most affordable way to reduce household emissions, which also provides a very high level of transport equity, is to provide all households with an active or public transport solution that works for them.

This should include an e-bike, adaptive cycle or e-cargo bike subsidy for students, disabled people or lower income earners, and/or low-cost or free public transport passes for the same user group.

To be most effective at reducing emissions, a vehicle scrappage scheme which replaces older ICE vehicles with a family e-bike solution (such as 2 adult e-bikes, or an e-cargo bike) would both reduce the size of the light vehicle fleet while improving transport equity.

Any subsidy for electric light vehicles (EVs) is likely to be of limited use for low-income families, for whom the purchase price of a newer model vehicle will likely still be out of reach. The maintenance costs of private vehicles will continue to place a disproportionate financial burden on lower-income families, continuing and exacerbating transport poverty.

Recognising that safety is the largest barrier to active modes participation, lower-income families in particular will benefit from considerably safer transport environments. Ensuring all areas have minimum safety standards for active transport modes will enable significantly greater transport choice, particularly for marginalised populations.

Similarly, public transport reliability and network coverage are principal barriers to use. Reducing traffic volumes and allocating priority lanes to public transport are rapid measures which can improve the relative performance of public transport networks.

### Planning

34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

Urban planning, including for smaller towns, should shift towards a "mixed use as of right" model which will enable more compact neighbourhoods to develop, including local commercial and employment opportunities within walkable distances of housing.

All new residential developments should take place within the walkable catchment of frequent public transport services. To enable this, developments would need to extend public transport services as part of, or prior to, any greenfields development.

Councils should be required to demonstrate robust justification for restrictive height limits in development, beyond subjective criteria such as "character". Height limits, and subsequent population density, should place walkable urban environments and climate change adaptation as high-level concerns when being decided by authorities.

### 35. Are there any other views you wish to share in relation to planning?

Increasing green space, tree cover and permeable surfaces can help to mitigate and avoid climate change. Maximum impermeable surface area requirements, or developer contributions towards additional green space, should be considered to offset urban development.

Consideration should be given to re-purposing road space in a way which helps to mitigate urban heat and stormwater issues, such as "green track" light rail, or reallocation of existing excessive road space and car parking to rain gardens or similar.

### Behaviour change - empowering others to act

# 42. What information, tools or forums would encourage you to take greater action on climate change?

Acknowledging that social media has become an unwelcoming place for many to engage meaningfully in discussions, and it's subsequent unreliability as a platform for decision making, means that more comprehensive methods of public engagement and representative decision making are required.

Investigation should be made into deliberative democracy or citizen's assembly working models, ensuring diverse representation, clearly defined outcomes and consideration for future generations when making important decisions or plans incorporating the issues highlighted in the Emissions Reduction Plan.

Communications around these issues should be consistent, inform around outcomes and benefits, and take place before discussing the necessary steps to achieve desired outcomes. Transparency is critical, and all parties participating must be willing to act transparently and in good faith.

# 43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

Representation matters and resources should be allocated to empower and inform diverse community representatives, including lwi, disability representatives, industry groups, varied ethnic communities and future generations. This will require considerable educational investment in these representatives, as well as compensation for their time and effort to effectively communicate with their respective communities.

Simultaneously, leadership is critically important and central government messaging will need to be consistent, comprehensive and evidence-based. New Zealand's COVID-19

response represents a good example of what is possible and could be followed in terms of central government communication.

# 44. Are there other views you wish to share in relation to behaviour change?

The continues marketing of fossil fuel use and ICE motor vehicles should be restricted and eventually prohibited, owing to the tremendous harm that these products cause.

The Bike Ready program, referenced in the discussion document, should be expanded with an aim to educate all New Zealand children in bike skills, with a comprehensive program developed by 2030. This will require additional investment in both human resources and program delivery assets.

New Zealand driver licensing should be reviewed in line with a predicted large increase in active transport mode share. Presently, little (if any) focus is given to interaction between private motor vehicles and road users outside of a vehicle. To remedy this, a compulsory segment of the written driver licensing test should include randomised questions relating to interactions with road users outside of a vehicle, to ensure all drivers are tested on these scenarios.

Similarly, drivers of heavy vehicles, particularly those in urban environments, should be required to undertake blindspot and awareness training (similar to the existing "share the road" scheme). This should already constitute workplace health and safety policy, but additional guidance may be necessary.

Continuing with New Zealand's relatively relaxed approach to road safety and driver responsibility, in view of a rapid increase in the number of people riding bicycles and other micro mobility devices, is likely to lead to a considerable increase in deaths and serious injuries if not properly and preemptively addressed.

New Zealand's existing Mandatory Helmet law places responsibility for safety on victims and likely suppresses cycling uptake. This law should be comprehensively reviewed based on international best practice and population health evidence. Suitable modifications to the law may be to require helmets only for minors (under 16 years of age), or for people on bikes travelling at higher speeds (i.e. greater than 30km/h).

### Transport

52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

#### Yes, but:

The target is not ambitious enough. We need to see at least a 20% reduction by 2030. Preferably, the target would be divided by mode (with the light vehicle fleet seeing a greater reduction in the first instance) and by region.

Defined regional targets for VKT reduction are essential to ensure that local road controlling authorities are accountable for meeting necessary objectives, instead of depending on other regions to compensate.

# 53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

#### Yes, but:

The target places too much focus on maintaining the light vehicle fleet.

Priority must be given to shifting people out of light vehicles, and targets should reflect this, including a possible target to reduce the light vehicle fleet size.

E-bikes should be recognised as the ideal emissions-free vehicle, considering their lower cost and associated health benefits.

Thus, the target should include a reduction in light ICE vehicle fleet size, an ambitious target for active transport mode share (set by region) and also a percentage of the light vehicle fleet to become emissions-free.

54. Do you support the target to reduce emissions from freight transport by 25 percent by 2035, and the associated actions?

#### Yes, but:

25 percent by 2035 would mean that freight is largely not "pulling its weight" in terms of emissions reductions.

To counter this, we should:

- Develop a comprehensive freight strategy which also plays close attention to road safety and Waka Kotahi's Road to Zero policy.
- Investigate all opportunities to move freight to rail and coastal shipping, and to further electrify the rail network.
- Investigate the role which e-cargo bikes can play in urban freight, and develop supporting infrastructure to enable more freight to travel by cargo bike, including urban logistics hubs.
- Recognise that freight efficiency is improved by reducing traffic volumes, further supporting the need for mode-shift away from light vehicle trips.

55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

#### Yes, but:

A more comprehensive approach would be to calculate how much fuel could be expended within each emissions budget period, then set a limit to how much fuel can be imported into Aotearoa in line with this maximum.

If a maximum import allowance is created, alternative fuel sources and fuel pricing will greatly assist with achieving a reduced fuel emissions profile without a need for additional government interference or complex regulation.

Any introduction of biofuels should include strict measures to ensure these policies do not lead to other negative environmental or social outcomes, such as deforestation or food poverty.

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change?

#### Yes, but:

We should bring forward the phase-out of ICE vehicles by setting a "sinking lid" policy on vehicle CO2 emissions efficiency through to 2030. We are presently importing far too many high-emissions vehicles, and this presents a risk to us meeting future targets.

Remove the Fringe Benefit Tax from all ICE vehicles as soon as practicable, and address other transport inequalities such as the ability for employees to claim kilometres travelled by motor vehicle, but not by walking or cycling.

Introduce a vehicle scrappage scheme with an intention to reduce the overall size of the ICE vehicle fleet. Ideally this scheme will replace a combustion engine vehicle with e-bikes or an e-cargo bike, or, alternatively, a multi-year public transport pass.

We should restrict advertising for ICE vehicles as soon as is practicable.

#### 57. Are there any other views you wish to share in relation to transport?

The scale of pace and change required to meet our climate targets cannot be overstated. We need to act as quickly as possible with transformational ambitions.

The suitability of existing transport entities to tackle this scale and pace of change is questionable. Presently, large transport agencies have shown little appetite or capacity for implementing the necessary changes to our transport system which are required, and in many instances have proposed and supported projects which may increase emissions or exacerbate an existing transport model which lacks resilience.

Consideration should be given to the structure, leadership, duties and funding provided to existing transport agencies to ensure they are reflexive and responsive to the climate challenge that we face. If needed, transport funding could be reallocated to a "Ministry of Green Works" or similar which understands the relationship between urban design, transportation and climate, and has sufficient mandate and resources to deliver transformational change.

Transport, health and climate are all linked, and cannot be addressed in isolation. Shifting our transport habits away from private vehicle journeys will have many far-reaching benefits beyond reducing emissions and climate mitigation.

Thankyou for your consideration of these points.

Nāku noa, nā,

Tim Adriaansen Bike Auckland Infrastructure Liaison

#### Submission to the Government Emission Reduction Plan consultation.

I am Bruce McDowell and this is my Emission Reduction Plan submission developed from my lockdown study / literature interpretation.

My interest is in gasification waste to energy. Gasification is old technology. Germany had a million vehicles running on gas producers through World War Two. The difference is that I have a technique for the combustion of the raw producer gas.

In a past life time, I was a drought prone pastoral farmer focused on making traditional grassland farming strategies more sustainable.

The leading question for my lock down study was;

What is the most meaningful long-term stable carbon accumulation?

Below are three realistic options that are totally scalable for meaningful reduction to atmospheric CO<sub>2</sub>.

- 1. Strategic grassland management.
- 2. Large scale carbonisation of biomass.
- 3. Co-composting biomass

There are no commercial drivers for either so in the absence of commercial viability, I have no answers. That is why my submission is all about my observations to my literature review which is begging the question, is the ETS fit for purpose?

The elephant in the room which was highlighted at the COP 26 is that the Emission Reduction Plan is like rearranging the deck chairs on the Titanic, it will not change the inevitable. We need atmospheric reductions.

The graphic below shows that all above ground biomass will become atmospheric and is central to the above observations.





Carbonised biomass (woodchip) soft to the center, heated to 400C in the absence of oxygen.

The waste statistics below (P. 7) show 61t in every 100t of waste is of organic origin.

Large scale carbonisation of biomass has the capacity to be a meaningful negative emission technology (P. 13)



The left side of Table A shows it makes no difference what we do; the outcome for above ground biomass **will** be the same. The only options for biomass emission reductions that we currently have are only changing the pathway to the same result, which is no long term reduction to atmospheric CO<sub>2</sub>. One way or another, sooner than later, all biomass will end up atmospheric, no more no less.

What that means is that there is a fixed amount of carbon in the environment (except from a fossil fuel release) An animal simply cannot fart more carbon than it consumed. The carbon result from grassland biomass direct to atmospheric will be no different than via the food chain, particularly if the carbon came from a perennial plant as opposed to one that requires fossil fuel for cultivation and replanting. (Read, grain and vegetable production)

The ETS supports planting pine trees which will be mostly atmospheric within fifty years, plantation harvest is the worst possible outcome for soil organic carbon. The right side of table A and table B show that a pyro process of waste biomass will produce a carbon stable residual product with a half life of hundreds of years without becoming atmospheric but that gets no recognition at all.

What will make a meaningful difference to carbon accumulation is strategic defoliation of a genuinely perennial grassland plant promoting below ground tissue turnover.

The study below is about substantiating the below ground biomass accumulation to increased above ground biomass accumulation after a season of deferred grazing relative to rotational grazing.

https://www.agresearch.co.nz/assets/Uploads/Deferred-Grazing-Handbook-e-version-Dec-2020.pdf

Also on You Tube <u>https://www.youtube.com/watch?v=JR9TickLtRQ</u>



Figure 12. Photos from a glasshouse study comparing the impact of simulated 'deferred grazing' and 'rotational grazing' on the root mass. The photo on the left shows the ryegrass growing in metre-long tubes before treatments were applied. The simulated 'standard rotational grazing' treatment had the smallest root mass (A) and the simulated 'deferred treatment' had a 3-fold greater root mass (B).

The above pot trial from a seed is not a good replicate of deferred grazing but it is a good illustration of how debilitating rotational grazing is to plant dynamics.





These four photos raise a number of questions that would all bring upside to the carbon advantage in column B.

The lower right photo shows that at reproductive maturity, the plants energy reserves have gone into seed production and perennial regeneration is very lethargic.

In this study, David Tilman at the University of Minnesota, ..... "We show that high-diversity mixtures of perennial grassland plant species stored 500% and 600% more soil C and N than, on average, did monoculture plots of the same species"

# Plant functional composition influences rates of soil carbon and nitrogen accumulation

https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2745.2007.01345.x

David Tilman's intensive defoliation strategy was really quite simple; he had an annual burn off leading to a below ground tissue turnover by an order of magnitude proportional to the defoliation.

David Tilman's observations show that increasing species diversity correlates to increased biomass accumulation and is a predictor of below ground accumulation. What he does not put a value on is just how strategic the intensive defoliation is to his ongoing annual below ground accumulations.

This image illustrates below ground biomass peaks at stem elongation / seed head emergence.



David Tilman's defoliation was at the end of winter which could be five or even six months after reproductive maturity, as the above plant on the right.

Decapitation two months previous to reproductive maturity, at stem elongation / seed head emergence would have interrupted the primary seed head development, secondary and subsequent seed head is much less vigorously reproductive.

The image shows the decline in below ground biomass subsequent to seed head emergence which is being committed to seed production so decapitation before this will mean that there is a large below ground energy reserve of water soluble carbohydrate that now has no supporting carbon accumulating green leaf area, the lamina reserves plus sunlight at the base of the plant, drives rapid recovery through new tiller initiation with new root system resulting in below ground tissue turn over contributing to soil organic carbon and nitrogen accumulation.

Potentially, David Tilman could have had two or even three defoliations that would have maintained green leaf area for sunlight capture and carbon accumulation, each an opportunity for new tiller initiation and potentially, inflicting increased mortality in the geriatric tiller population for below ground tissue turnover.

The lower right deferred grazing pic, shows the domination of the default species is perpetuated because poor grazing discipline allowed for the selection of the preferred species which is disadvantaging the preferred species to the less preferred species.

Intensive defoliation by decapitation will promote species diversity as described by David Tilman which already exists, Ref lower right deferred grazing pic; the difference now is that the default species will need to compete on a vegetative basis with the improved species.

The lower left deferred grazing pic shows defoliation by trampling has interrupted reproductive maturity but will not have contributed to meaningful below ground tissue turn over. Other issues include weed proliferation and patchy defoliation intensity.

Defoliation by decapitation is unachievable with animal strategies, increased stubble will impede sunlight reaching the base of the plant and geriatric tiller mortality will not be achieved. Mowing and harvesting reproductive surplus would be required.

This study from 2018 supports the limited capacity for rotational grazing to contribute to soil organic carbon.

Management practices to reduce losses or increase soil carbon stocks in temperate grazed grasslands: New Zealand as a case study.

https://www.cabdirect.org/cabdirect/abstract/20183306957

..... New Zealand grassland systems have moderate to high soil carbon stocks in the surface layers (i.e., upper 0.15 m) where most roots are located, so the carbon saturation deficit is relatively low and the scope to increase soil carbon stocks by carbon inputs from primary production may be limited.

This study supports intensive defoliation.

#### Nutrients and defoliation increase soil carbon inputs in grassland

https://www.researchgate.net/profile/Andrew-Macdougall-

2/publication/236249074\_Nutrients\_and\_defoliation\_increase\_soil\_carbon\_inputs\_in\_grassla nd/links/549c15bc0cf2d6581ab47161/Nutrients-and-defoliation-increase-soil-carbon-inputsin-grassland.pdf

Nutrient application appears to confuse root observations, in the absence of nutrient application, root development will in some cases be more extensive.

#### Meaningful carbon accumulations.

The four references above show that;

• Rotational grazing represents a conflict of interest to the below ground accumulation.

• Strategic defoliation is critical to below ground tissue turn over for ongoing carbon accumulation.

#### **Carbonisation of Biomass.**

- The Lehmann bio char graphic (P 1.) shows that large scale carbonisation of biomass is the only option we have for carbon stable accumulation of above ground biomass.
- Bio char has very poor credibility, both commercially and academically with the IPCC, but large scale carbonisation of waste biomass does have the potential to be a seriously meaningful Negative Emission Technology but environmental drivers are not commercial drivers.

PP.6-7 in the executive summary gives a good New Zealand perspective https://www.nzagrc.org.nz/assets/Publications/Potential-Role-of-Biochar-in-NZ-2021.pdf

Gasification of biomass and refuse derived fuel has a huge environmental upside over mass incineration of mixed metropolitan solid waste. Direct combustion (incineration) turns all the organic carbon into CO<sub>2</sub>. Gasification turns the fixed organic carbon into a form of elemental carbon which is long term carbon stable and will not become atmospheric with a half life of hundreds of years.

Gasification is ideal for difficult to combust and composite materials like Tetra pak, textiles, paper and packaging, hospitality / fast food / food court waste, tyres, mattresses, kids toys. Metals will be free of rubber and plastic contaminations without reaching metal oxidizing temperature which is less than red heat.

Gasification gives us the opportunity to blend a number of high excess energy waste stream feedstocks that are extremely difficult via direct combustion, all come with front end funding which will be highly relevant in five years time with increased demand for biomass boiler fuel.

There are two upsides to co-gasifying biomass with mainstream plastics, 1. Increased fuel value. 2. Secondary cracking increases cation exchange capacity of the carbon residual, increasing the carbon ability to absorb and release plant available water and nutrient. https://bioresources.cnr.ncsu.edu/resources/characterization-of-biochar-obtained-by-co-pyrolysis-of-waste-newspaper-with-high-density-polyethylene/

Waste statistics

#### Potential of pyrolysis processes in the waste management sector

https://www.sciencedirect.com/science/article/pii/S2451904917300690#b0780



Europe has only allocated 10% inorganic gasable plastics and textiles so presumably, more composites and tyres are in other or recycled. US is 22% so lets say 20% because Europe's other will include a lot of composite high energy material.

The above waste statistics can average out to about 81 tonne of gasafyable product (give off combustible volatiles when heated) in every hundred tonne of waste, of which, 61 tonne will be of organic origin (including paper and cardboard) and will not be carbon stable in the landfill.

The main difference in Christchurch to the above is less of organic origin. The paper fraction is just 30% of the above and the city green waste plant is processing 50,000t /annum (not included) I have used Northern hemisphere of organic origin.

61t of organic will produce a theoretical 184Gj (subject to moisture content) plus 11t carbon stable residual that will not become atmospheric with a half life of hundreds of years while contributing to ongoing emission reduction through the cation exchange capacity. The 11t of carbon will have an energy value of  $\sim$ 30Gj/t. It will be of a quality similar to coking coal so commercial reality says make it into atmospheric CO<sub>2</sub> so there is a lot more upside for the ETS to support carbonisation of biomass over planting pine trees. This is not the business plan but the carbon does need a value to give the ETS perspective

These are the most comprehensive, recent local waste statistics I can find.

https://www.ccc.govt.nz/services/rubbish-and-recycling/how-were-doing-with-rubbish-and-recycling/waste-statistics/

| Type of waste disposed | 2011/2012 audit figures |
|------------------------|-------------------------|
| Timber                 | 20.4%                   |
| Organics               | 19.5%                   |
| Rubber                 | 12.3%                   |

The types of waste disposed of include:

| Rubble, concrete etc  | 12.3%   |
|-----------------------|---|
| Plastics              | 11.3%   |
| Special waste*        | 10.3%   |
| Paper                 | 8.6%  |
| Textiles              | 6.2%  |
| Sanitary waste        | 3.8%  |
| Glass                 | 3.7%  |
| Ferrous materials     | 2.8%  |
| Non-ferrous materials | 0.5%  |
| Total                 | 207,485 tonnes = 78% = ~162,000tonnes gasable |

11% of 207,000 tonnes would equate to ~23,000 tonne/annum for Christchurch City is meaningful negative emission strategy.

The City green waste plant processes 50,000 tonne/annum and there are a number of other substantial independent operators.

#### Waste recovered carbon.

The biochar research community has a mountain of literature supporting the carbonisation of biomass. but waste stream residual product can not be called biochar as it will not meet the European standard so I suggest calling it Waste Recovered Carbon (WRC).

#### The bio char advantage.

The efflux study below is showing a 20% soil emission reduction of  $N_2O$  and  $CO_2$  plus a soil moisture advantage for a 2% bio char application.

https://www.researchgate.net/publication/48856368\_Hydrothermal\_carbonization\_of\_biomas s\_residuals\_A\_comparative\_review\_of\_the\_chemistry\_processes\_and\_applications\_of\_wet\_ and\_dry\_pyrolysis



1380 - 1100 = ~ 20% reduction?

This appears to be a 20% emission reduction for a 2% biochar application. Concievably, increasing the reactive Soil Organic Carbon apparent saturation Limitation

C. shows a significant increase in plant available water, a further climate change mitigation by increasing grassland plant capacity to maintain green leaf area for atmospheric CO<sub>2</sub> accumulation for longer into periods of moisture stress.

On that basis, say the pyro process resulting in a 330kg of carbon stable residual from one tonne of biomass dry matter applied to one hectare. A one in ten soil emission reduction for N<sub>2</sub>O and CO<sub>2</sub>, would appear to be a combined 6600kg of plant available N<sub>2</sub>O and CO<sub>2</sub> for a 330kg/Ha application bio char.

The crop plant picture below suggests a feedstock of C4 grasses that will be representative of a city green waste material but equally valid for our C3 grassland biomass. The moisture content will be a serious drag on a pyro process. Air drying of soft tissue biomass results in large dry matter loss to atmosphere, particularly in less than ideal drying conditions.

https://biochar.co.nz/



#### <u>Co-composting.</u>

If the soft vegetative biomass was composted first with a high rate of biochar, applying the efflux study result above would suggest a reduction to the biomass emission / reduced weight loss, seriously changing Lehmann's biomass emission prediction on page two.

The larger more lignified particles of composted plant tissue and woodchips can be screened out of the finished compost process; air dried and become pyro process feedstock. The carbon char needs to be crushed to smaller than the compost screen mesh size and then returned to the composting process for emission reduction / nutrient retention, boosting NPK rating as it is representative of the nutrients removed with its production harvest.

By adding some of the 23,000 tonnes to the 50,000 plus other Christchurch compost operator's tonnes could potentially achieve emission reduction by a factor ten as shown in the efflux study which would be way more meaningful for Christchurch than blaming the animals for farting

Once again, the ETS will not recognise this environmental upside which is far greater than the commercial upside.

Here is an illustration showing the difference between the application of raw biochar and biochar after being recovered from a three month incubation period in a composting process.

http://www.ithaka-journal.net/wege-zu-terra-preta-aktivierung-von-biokohle?lang=en



The experiment by Andreas Thomsen clearly shows the importance of charging biochar. In the picture, the upper portion shows a series of experiments wherein pure biochar particles were added in increasing dosage. In the lower series of the picture, the biochar was composted first for 4 months and then cleaned of compost to make sure that only the charged biochar in the experiment was used. While pure biochar resulted in growth inhibition of mustard plants, charged biochar showed a significant increase in growth (thanks to Andreas Thomsen).

Maximum realistic land application rate would be 2% and either way, both 2% pots compare well with the control.

There are a number of reasons why I believe that bio char has poor credibility and one is the huge variability resulting from different feedstocks, different characteristics for different process temperatures and in application response to different soil types. By applying it to the composting process overcomes a lot of this variability.

For this reason, there is a lot of upside to composting bio solids with bio char because of the nutrient retention and heavy metal mitigation.

#### Carbonisation of bio solids.

There are 17 waste water plants in New Zealand and as we have seen in Christchurch, their emission capacity is huge.

The study below is about using pyrolysis for mitigating heavy metals in metropolitan sewage sludge

#### Pyrolysis Treatment Enables Safe Application of Sewage Sludge in Horticulture – Tracking Potentially Toxic Elements Through the Biochar-Soil-Plant System in Tomato

https://www.researchsquare.com/article/rs-550236/v1

This study is about mitigating contaminated soil.

Influence of biochar application methods on the phytostabilization of a hydrophobic soil contaminated with lead and acid tar https://www.sciencedirect.com/science/article/pii/S0301479714005647



<u>Carbon Capture and Storage.</u> Carbonisation of biomass is way outside the stated expectation of operation for this concept but it fits and is more commercially achievable with more ongoing benefit to organic carbon accumulation while maintaining economic activity.

https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/low-emissionseconomy/carbon-capture-and-storage/

Soil Carbon Sequestration and Biochar as Negative Emission Technologies

https://core.ac.uk/download/pdf/78911648.pdf



#### Here is a bio char review from a pro bio char site

https://www.ithaka-institut.org/en/ct/99-Biochar-as-key-material-for-the-future-of-civilisation

#### A quote from the same site. Dead rat in char



A dead rat, nicely buried in a cigar box so as to be surrounded at all points by an inch of charcoal powder, decays to bone and fur without manifesting any odor of putrefaction, so that it might stand on a parlor table and not reveal its contents to the most sensitive nostrils (Unknown Author, The Garden, 1873

http://www.ithaka-journal.net/?lang=en

Bruce McDowell

Christchurch



Website: www.southernxpress.co.nz



24 November 2021

Ministry for the Environment PO Box 10362 WELLINGTON 6143

By email: climateconsultation2021@mfe.govt.nz

Dear Sir or Madam,

#### **Emissions Reduction Plan Discussion Document**

Chartered Accountants Australia and New Zealand (CA ANZ) welcomes the opportunity to provide feedback on the above discussion document. Appendix A provides more information about CA ANZ.

CA ANZ continues to be an advocate for, and supporter of, a just transition to a net zero economy. As a professional body, CA ANZ seeks to advocate in the public good on policy areas that impact our members, the accounting profession and the public.

We recognise that climate change mitigation and adaptation will substantially rely on both macro and micro economic policies and the associated market and non-market mechanisms in which accounting practices are embedded. The profession can make a significant contribution to both climate change mitigation and adaptation at individual entity, industry sector and economy-wide levels. Accountants are ideally placed to be involved in risk management, operational resilience processes, reporting and measurement activities.

#### Agriculture

We are supportive of initiatives like He Waka Eke Noa which support education and research activities and provide a framework for measuring on-farm emissions and developing on-farm mitigation plans.

Our rural sector members are concerned that existing technologies are not overlooked in determining the level of biogenic methane reductions that are achievable. They recognise that new technologies will also contribute to mitigation efforts, but believe that the contributions from existing technologies may not be well understood.

#### Forestry

Our rural sector members have raised concerns over the use of forestry (in particular, permanent exotic forestry) as a buffer (as referred to in question 106). Internationally, we note that concerns have been raised regarding the 'race to net zero' and emissions offsets being used in place of genuine reductions in emissions.

We consider it critical for the Ministry for the Environment to ensure efforts are primarily focused on emissions reduction and elimination in sectors where solutions are available. As has already been implemented by some jurisdictions overseas, we encourage the Ministry for the Environment to consider limiting the use of offsets by these sectors in the future.

Chartered Accountants Australia and New Zealand 33 Erskine Street, Sydney, NSW 2000 GPO Box 9985, Sydney NSW 2001 T +61 2 9290 1344



We support the use of native forests as long-term carbon sinks (as opposed to the use of exotic forestry for this purpose), particularly as native forests also provide native ecosystem and biodiversity benefits.

We encourage the development of a transparent and centralised process for determining appropriate sites. Further research is needed to determine the 'right tree in the right place,' particularly as some land currently classified as 'marginal' supports regional communities and provides large-scale employment.

Transparency as to the entity(s) using a particular forest to offset their greenhouse gas emissions is important. This would provide accountability and encourage better-quality forestry offsets.

#### The role of tax

As we noted in <u>our submission to the Climate Change Commission</u>, we encourage the Ministry for the Environment to build on existing proposals to use the tax system to support clean transport options and the just transition in other areas like water and waste. As different proposals are developed, consideration of the future tax base (as a result of incentives and changing behaviours) is needed. We also encourage the Ministry for the Environment to consider the Tax Working Group's recommendations about the use of environmental taxes to price negative externalities.

#### Conclusion

As the Ministry for the Environment is aware, the impacts of climate change are already being felt throughout the world and urgent action is needed to limit the consequences. With climate change come potentially profound negative economic and non-economic consequences including effects on production, financial stability, living standards and employment - and more indirectly on social cohesion and political stability. On the upside climate change nevertheless presents transformation opportunities.

Widespread and ongoing awareness raising and consultation will be key to ensuring that a just transition takes place. Consultation will be needed to understand the effects on all stakeholders including financial and compliance costs, and the policies needed to protect the most vulnerable.

Yours sincerely

**Peter Vial FCA** New Zealand Country Head Karen McWilliams FCA Business Reform Leader Advocacy & Professional Standing



chartered accountants an z.com

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## Appendix A

#### About Chartered Accountants Australia and New Zealand

Chartered Accountants Australia and New Zealand (CA ANZ) represents 131,673 financial professionals, supporting them to make a difference to the businesses, organisations and communities in which they work and live. Chartered Accountants are known as Difference Makers. The depth and breadth of their expertise helps them to see the big picture and chart the best course of action.

CA ANZ promotes the Chartered Accountant (CA) designation and high ethical standards, delivers worldclass services and life-long education to members and advocates for the public good. We protect the reputation of the designation by ensuring members continue to comply with a code of ethics, backed by a robust discipline process. We also monitor Chartered Accountants who offer services directly to the public.

Our flagship CA Program, the pathway to becoming a Chartered Accountant, combines rigorous education with mentored practical experience. Ongoing professional development helps members shape business decisions and remain relevant in a changing world.

We actively engage with governments, regulators and standard-setters on behalf of members and the profession to advocate boldly in the public good. Our thought leadership promotes prosperity in Australia and New Zealand.

Our support of the profession extends to affiliations with international accounting organisations. We are a member of the International Federation of Accountants and are connected globally through Chartered Accountants Worldwide and the Global Accounting Alliance. Chartered Accountants Worldwide brings together members of 15 chartered accounting institutes to create a community of more than 1.8 million Chartered Accountants and students in more than 190 countries. CA ANZ is a founding member of the Global Accounting Alliance which is made up of 10 leading accounting bodies that together promote quality services, share information and collaborate on important international issues.

We have a strategic alliance with the Association of Chartered Certified Accountants. The alliance represents more than 870,000 current and next generation accounting professionals across 179 countries and is one of the largest accounting alliances in the world providing the full range of accounting qualifications.

We employ more than 500 talented people across Australia, New Zealand, Singapore, Malaysia, Hong Kong and the United Kingdom.



| From:    |  |
|----------|--|
| Sent:    |  |
| To:      |  |
| Subject: |  |

Wednesday, 24 November 2021 5:04 pm climate consultation 2021 Last-minute submission on ERP

### MFE CYBER SECURITY WARNING

# This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Hello,

apologies for lateness and brevity of this submission.

Among waste to strengthen the ERP - as is necessary for us to meet our commitments and as we should be doing anyway so that we don't overburden generations to come - are the following steps:

- more commitment on reducing emissions from agriculture. They should be part of the ETS. Regenerative practices should be encouraged. Phase out nitrogen fertiliser. More efforts to reduce meeting output through breeding, feeding et cetera. We have all these skilled and talented agricultural specialists - maybe they just need more support and more incentive. Mixture of carrot and stick is always required.
- If the huge industries initially given a huge reduction in commitment required under the ETS still get it (most of our biggest carbon contributors) this should be phased out quickly and eradicated. They will not change production methods until that is the best business decision for them to make. Externalised costs and moral arguments are unlikely to shift their dial.
- Public transport should be free for students the gold pass for Superannuants is a great idea.
- Upgrade rail network to get more trucks off the road
- invest in and/or encourage coastal shipping for the same purpose
- stop investing so much in the urban motorway network.
- Stop importing secondhand old petrol and diesel cars that are just importing other countries carbon emissions by 2025 or 2030
- increase incentives for solar in batteries for homes
- continue investment in EECA to increase insulation
- ensure that carbon cost considerations are included in building standards
- decrease reliance on buying carbon credits overseas to meet our obligations. This is not a good stance for us to take on the international stage. It is also not one that we can control whether it actually happens or not.
- Encourage clean energy production
- have a ":nature first" approach. We don't want to end up losing a productive land to a sea of monoculture pine forest, that just ends up a generation later producing intractable wilding problems. Encourage retention of and planting of native forests and other vegetation. Pine forest - on top of the environmental issues they produce - are likely to be a one generation solution only, with no guarantee that they will be replaced once felled.
- Work with your communities there is a lot of wisdom out there. A lot of environmental groups, local community resilience groups et cetera have good ideas. Top-down isn't the only answer.

Thanks for the opportunity to submit.

Ngā mihi nui

| From:    |
|----------|
| Sent:    |
| To:      |
| Subject: |

Cathi Manning Monday, 22 November 2021 8:36 am climate consultation 2021 Pine plantations.

### MFE CYBER SECURITY WARNING

# This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

To whom it may concern,

I wish to express my thoughts on the government's plans to permit more planting of pine trees and more loss of valuable farmland. The foreign investors who are planting these pines have no regard for the environment or for the New Zealand citizens that this will affect. Small communities are changing and dying which destroys the valuable networks of community that are so vital to people who live and work locally.

The government is there to serve and care for the people of New Zealand and therefore all decisions which make life changing impacts on New Zealanders need to be carefully thought out and made with the best interests of New Zealanders in mind. The ideas and suggestions of others who believe a one size fits all approach to climate and environmental matters should not be the major influencer in any decisions.

I am very concerned about the direction New Zealand is taking and I ask for more consultation and discussion before these very serious decisions are made. All of the consequences need to be considered as is the case with any matter of importance. Catherine Manning

| From:    | Chris Burton                      |
|----------|-----------------------------------|
| Sent:    | Monday, 22 November 2021 10:07 am |
| То:      | climate consultation 2021         |
| Subject: | Consultation feedback             |

#### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Hi. Please limit carbon offsetting using afforestation on farmland, especially productive country. The loss of so much great land in the King Country (including our family farm) is devastating.

Nga mihi Cheers

#### **Chris Burton**



Specialist Classroom Teacher Senior Production Director and Production Manager Junior Musical Theatre Co-ordinator Palmerston North Boys' High School Developing Educated Men of Outstanding Character Hai Whakapakari i Ngā Tamatāne Kia Purapura Tuawhiti

### **Submission on Emissions Reduction Plan**

Chris Livesey

23 November 2021

I am an ecological economist who worked for MfE and the Australian Federal Department of Climate Change on the mitigation of GHGs for 20 years (1990 – 2011). Since then I have continued to take a keen interest in the area and have kept up with the progress, or so often, the lack of progress.

I am the owner of a forest (predominantly exotic species) that is registered under the ETS and I am the Chair of a charitable trust that owns regenerating native forest that is registered under the ETS.

### 1. Establishing the 'why', 'how' and 'when'

# Need for a strong, coherent narrative by the Government to lead the transition to a climate friendly future

This is essential to achieve the things set out on p13 of the consultation document. To date this has been lacking. The Prime Minister, as well as key Ministers, needs to clearly own and promulgate this narrative.

This narrative must recognize that while actions by individuals, households and businesses to reduce their emissions are helpful and are to be encouraged, by themselves they will not be nearly enough to get us to net zero by 2050. Economy-wide systemic changes are necessary, and often these will involve creating situations where doing the financially sensible thing (something that is a very common motivator in society) will have the effect of reducing emissions.

This narrative must also make it clear that a climate friendly future will be a good future: the big changes will not be in what we do, but in how we do it. We may have to change the sort of car we drive, we may take public transport or cycle or walk more than we do now, our trucks, buses, ships and planes may use different fuels, our farms may involve more trees and less dairy cows, we may use different fuels to dry milk for export, we may use less coal and gas to generate our electricity but we will still have good health and education services, we will still spend quality time with family and friends, we will still enjoy recreational activities, we will still be able to access and use the internet, we will still be able to go out to cafes, bars and restaurants, there will still be jobs for those who want them, we will still be able to go shopping, we will still be able to travel, ....

# 2. Getting appropriate incentives in place within the Government and the public service

The Government always has one eye on being re-elected and, as has been clearly demonstrated over the past 20 years in relation to a transition to a climate friendly future, this gives the Government a huge incentive to avoid doing anything that they think would make a sizeable portion of their constituents disaffected. If the Government is going to set an effective transition in train it has to move beyond this and, inter alia, take the following actions.

#### Ministerial accountability

It is good that there is a Climate Change Response Ministerial Group chaired by the Prime Minister. However, for this to be effective the Prime Minister must create strong incentives for relevant Ministers to perform. She must make performance in this area a key part of relevant Ministers' performance assessment and be ruthless in replacing any Minister who fails to perform.

In turn, this will motivate relevant Ministers to demand effective and timely action from their public service agencies.

#### Public service CEO accountability

If he has not already done so, the Public Service Commissioner must make performance in this area a key part of the performance agreement of CEOs of relevant government agencies. If necessary, the Minister for State Services must instruct the Public Service Commissioner to do this.

#### **Mission-based approach**

Mission-oriented innovation (Qu 22 and pp45/46). Probably a helpful approach that should help overcome Ministers' and agencies' siloed and territorial tendencies. Get on with it.

### 3. Principles

One of the principles set out on p20 of the consultation document is "a clear, ambitious and affordable path". Without further definition 'affordable' is meaningless: affordable to what or whom – the country, the Government, the most severely affected industries, the most vulnerable sections of society, generations of as yet unborn New Zealanders, .....?

As the Government's response to Covid has demonstrated very clearly, a level of government expenditure far in excess of what 24 months earlier would have been regarded as affordable, has now been accepted as affordable.

Also, in part, an assessment of 'affordability' requires consideration of the costs that will be incurred if the actions in question are not taken. As far as reducing GHG emissions is concerned, the costs that will be incurred if emissions are not reduced to achieve net zero by 2050, or earlier, will be huge.

I fear that 'affordable' will be a euphemism for 'does not jeopardise the Government's likelihood of being re-elected'.

### 4. Don't sweat the emissions budgets

What is most important is the actual reductions made in net emissions, and actual reductions in net emissions are the result of government policies, not emissions budgets.

Yes, emissions budgets are useful as a guide to the level of emission reductions required in each period but the high level of uncertainty regarding the actual emission reductions that will be achieved by any given set of policies means that there is nothing to be gained by sweating the emission budgets – as long as they are in the right ballpark all the effort should go on designing and implementing policies that will deliver in that ballpark.

### 5. Buying overseas credits

I understand that the Government is proposing that a large part of achieving net zero by 2050 will be through the purchase of overseas credits - I have seen the figure of \$6.5bn. Prima facie this seems crazy to me. I am extremely sceptical that this money, or at least a large proportion of it, would not be better spent on actions that reduce emissions here at home.

Yes, on a narrow cost/tonne basis, or a narrow likelihood of re-election basis, it may be cheaper to get to net zero by buying overseas credits than by reducing gross emissions at home but what about the missed opportunities to develop new employment opportunities and appropriate technologies here at home, and what about after 2050? And then there are the risks around the environmental integrity of overseas credits.

I want the Government to put its emphasis on implementing the necessary systemic changes at home, on fostering emission-reducing innovation and technological developments at home, thereby reducing gross emissions and creating lower-emission employment at home, and I am happy to pay any additional tax that would be required to pay for that as opposed to buying overseas credits.

Some examples of actions that could be alternatives to buying overseas credits are:

- Early availability of liquid biofuels that can be used in existing engines (reducing fossil fuels used in heavy transport)
- Use of solid biofuels for process heat
- Converting Huntly power station to run on wood
- 'Drop-in' marine fuel oil made from thermochemical destruction of biomass
- Step change in investment in regional rapid rail and bus services
- All day frequency, reliability and reduced fares for public transport
- Large scale pest management in native forests
- Lowering the price of electricity
- Substituting wood for steel and concrete in buildings
- More funding for NZ Green Investment Finance.

Many of these actions have other benefits in addition to reducing net GHG emissions, which is a further reason why a narrow cost/tonne GHG assessment is inappropriate.

### 6. Electricity

A large part of reducing our gross emissions depends on switching from fossil fuels to electricity. Two fundamental issues here are:

- What will be the source of the additional electricity?
- How can the price of electricity best be reduced (so that the switch to electricity is made more attractive)?

Re the first of these (and in response to Qu 2), the Government needs to get rid of the current disincentives to installing solar PV. It also needs to be confident, and tell the public the basis of its confidence, about how the additional electricity will be provided.

Re the second of these (and again in response to **Qu 2**), the Government needs to reform the electricity market and the Electricity Authority so that gentailers do not have an incentive to perpetuate having (high marginal cost) thermal generation on the margin.

Re both questions, and perhaps also relevant to having a source of hydrogen for heavy transport, the Government should cease giving the Bluff aluminium smelter handouts and cheap electricity deals.

### 7. Building and construction

# Qu 82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

Why does the section on Building and construction in the consultation document have so little to say about substituting wood for concrete and steel in buildings? Making that substitution not only reduces the demand for steel and concrete (the production of both is very emission intensive) but also keeps the carbon sequestered in the wood out of the atmosphere for long periods. More action required here.

### 8. Forestry

In general, it is significantly more costly to establish native forest than exotic forest which means that under current policy settings, exotic afforestation is generally a more attractive option than native afforestation for carbon farming.

There is a risk, probably a likelihood, with exotic afforestation where carbon income is a primary objective, that some (many?) afforested areas will be abandoned once they have earned their full entitlement of credits under the averaging regime; this will be particularly likely where the afforested land has severe environmental or cost constraints on harvesting. And even if harvested, almost all afforested land in the ETS will be locked into being reafforested unless and until the carbon price returns to low levels. In general I consider that it would be undesirable to have a large increase in the amount of land effectively locked into exotic forest.

On the other hand, in my view there will be few adverse economic, environmental or social impacts from a significant, but for the reasons given above, much smaller increase in land locked into native forest.

In my view, for these reasons, exotic forestry and native forestry need to be treated differently in the ETS.

# Qu 108. What's needed to make it more economically viable to establish and maintain native forest on private land?

A performance-based grant programme i.e. where a substantial proportions of the grant are given when successful establishment, and then successful maintenance, are demonstrated.

Do not reduce the expected carbon income from native afforestation in the way that I suggest it should be reduced for exotic afforestation (see below).

#### **Exotic forestry in the ETS**

Qu 30. Leaving aside on-farm emissions, the principal task that we face is to reduce gross emissions: forestry sequestration helps to buy us time but does not contribution to the principal task. For that reason I strongly agree that the treatment of exotic forestry in the ETS should not result in a delay, or reduction in effort, in reducing gross emissions in other sectors of the economy.

I also think that the treatment of native forestry in the ETS should not result in a delay, or reduction in effort, in reducing gross emissions in other sectors of the economy but for the reasons given above I think that native afforestation is much less likely to have this effect at a significant level and that a distinction should be made in the ETS between exotic and native afforestation.

Qu 31. I think that the best way to manage incentives for exotic afforestation is to reduce the expected return to exotic carbon farming, perhaps even reducing it to below the expected return to native carbon farming. Three of the options suggested by the Climate Change Commission (limiting the number of exotic forestry units that non-forestry participants in the ETS can surrender, requiring non-forestry participants in the ETS to pay an additional fee when surrendering exotic forestry units, reducing the rate at which exotic forests earn units) would do this.

The Commission's other suggestion, limiting the overall area of forest that can be registered in the ETS in each year, seems to me to involve 'first in best dressed' which seems to me to be an economically inefficient approach, additional administrative decision-making (for what benefit?) and a less manageable form of uncertainty for forest growers; I think this issue would be better regulated through the market via one of the other three options.

#### What forests should be encouraged?

**Qu 109.** Long rotation alternative exotic species and continuous canopy cover exotic forests should be encouraged: the former to develop a diversified domestic wood supply and the latter as a management regime with much reduced adverse environmental effects. However, for the reasons set out above I think these forest should be treated in the ETS on the same

basis as all other exotic forests and that additional Government encouragement for them should be through other policy instruments.

There are very significant risks to the success of exotic to native transition forests: they can be successful but only when all the necessary conditions are present. In my view significant administrative controls would be required to ensure a reasonable rate of success. I don't consider that such transition forests are of sufficient value to warrant the investment of that level of administrative control and for that reason they do not warrant Government encouragement over and above that given by the ETS.

The potential carbon returns from an exotic forest registered in the ETS as a permanent forest are greater than those from an exotic forest registered under the averaging regime. As noted above I consider that policy changes need to be made to reduce the expected carbon returns from exotic afforestation, and consistent with that I consider that contiguous areas of exotic forest that together are greater than say 100ha should not be eligible for registration in the ETS as permanent forests.

My reasons for suggesting that small areas of exotic forest should be eligible to register as permanent forests are twofold: firstly I believe that much of the innovative and experimental forestry (long rotation alternative species, continuous canopy cover) is taking place on smaller blocks and policy should not discourage this innovation and experimentation, and second, any adverse economic, environmental or social impacts will be small.

**Qu 110**. No, I would not support more afforestation if we used more wood and wood residues from our forests to replace high-emitting products and energy sources. My reason for this position is that the limitations that I believe should be put on (exotic) afforestation remain appropriate irrespective of what uses the production from the forests are put to: any additional wood put to the uses specified in the question should come from other uses (including export) or in the case of wood residues, wood that would have been left in the forest, not from additional afforestation.

# What role should various parties have in influencing the scale and location of afforestation?

**Qu 111.** Central government should strongly influence the scale of afforestation through the ETS (as discussed above) and through grant programmes such as the One Billion Trees Programme. It should also influence the location of afforestation through investment in research, development and demonstration activities that will facilitate the establishment of forest produce processing plants e.g. wood chip as a replacement fuel for process heat or electricity generation, liquid fuel production from thermochemical destruction, production of ground durable timber, bio-chemicals, sawmills, .....

Regional government should influence the location of afforestation through its responsibilities under the RMA (land preparation and harvesting requirements relating to soil conservation, erosion, water quality and aquatic life) and it should influence both the location and scale through the assistance provided through its water and soil conservation programmes.

District and city councils should not influence the location or scale of afforestation through the RMA or other means.

Within the framework provided by the above central and regional government policies and activities, the private sector should then determine the location and scale of afforestation.

#### Government support for pest control/management in forests

Qu 112. The Government could fund pest control in a similar way to how it funded deer control through the NZ Forest Service in the middle of last century (it employed deer cullers and provided huts for them to use as their bases).

Significant sequestration gains could be made by animal pest cullers on public conservation lands. I understand that the risk to carbon sequestration from animal pests is greatest in native forests and that being so, government pest cullers could also be contracted by, or provided as a free service to, owners of private native forests.

# Qu 109. The policies that are needed to seize the opportunities associated with forestry while managing the negative impacts include:

Central government

- Reducing the expected return to exotic carbon farming by one of the three options endorsed in my response to Qu 31 (see p5 above);
- Reducing the expected return to large scale exotic carbon farming by making contiguous areas of exotic forests totaling more than a certain size (say 100ha) ineligible to be registered as permanent forests in the ETS;
- Continuing grant programmes similar to the One Billion Trees programme and various erosion control programmes;
- A performance-based grant programme for establishment and maintenance of native forest;
- Funding animal pest control on a large scale in native forests;
- Investing in RD&D that will facilitate the development of additional wood processing facilities;
- Incentives and/or regulation to increase the substitution of wood for steel and concrete in buildings;

Regional government

- Continuing RMA controls to secure appropriate environmental outcomes;
- Continuing support to landowners through water and soil conservation programmes.

### 9. Final plea

Prime Minister, Ministers and public servants PLEASE GET ON WITH IT !!!!

I was expecting that we would be being consulted now on definite proposals but no, the Consultation document is stuffed full of statements like:

- we are exploring ....
- we are scoping options ....
- we will investigate ....

In relation to "my generation's nuclear-free moment" this is very, very disappointing.


24 November 2021

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PO Box 73013 Christchurch 8154

ccc.govt.nz

Ministry for the Environment Manatū Mō Te Taiao PO Box 10362 Wellington 6143

Email: climateconsultation2021@mfe.govt.nz

# Christchurch City Council submission on Te hau mārohi ki anamata - Transitioning to a lowemissions climate-resilient future

Christchurch City Council (the Council) thanks the Ministry for the Environment for the opportunity to provide comment on the *Te hau mārohi ki anamata - Transitioning to a low-emissions climate-resilient future* discussion document.

Please find attached the Council's response to the questions contained in the discussion document.

Yours faithfully

Lianne Dalziel

Mayor of Christchurch



# Christchurch City Council response to Te hau mārohi ki anamata -Transitioning to a low-emissions climate-resilient future. Ministry for the

Environment, New Zealand Government. November 2021

## Introduction

The Council would like to acknowledge the importance of this document and the significance of preparing the first holistic emissions reduction plan for New Zealand. We would like to thank the staff involved in preparing this document and for engaging with New Zealanders about this important topic. We also congratulate the government on the recently announced increase to the country's Nationally Determined Contribution (NDC). It is important that New Zealand plays its part in global efforts to reduce emissions and this higher target is more aligned to this, and the latest science from the Intergovernmental Panel on Climate Change. The updated NDC is more closely aligned to targets set by the Christchurch City Council after consultation with our community.

We believe local government is ideally positioned to partner with the central government to reduce greenhouse gas emissions - to improve public transport networks, increase cycling and walking, create greener, low-emission neighbourhoods, and to minimise waste. This has long been a priority for the Council, and we look forward to working closely with central government on these shared priorities in the future.

#### **Increased ambition**

The Council encourages greater ambition in the final Emissions Reduction Plan (the Plan). We are concerned that the current suite of planned policies suggested in the consultation document leave a large gap between expected reductions, and those required to meet the emissions budgets. There needs to be a greater focus on reducing emissions through domestic efforts, rather than accepting we will miss targets and need to buy international offsets. We believe that offsetting up to 66% of New Zealand's greenhouse gas emissions does not represent a fair or reasonable contribution to global efforts. Publishing a Plan that your own modelling estimates would miss the 7.7 Mt CO2 -e reduction target by between 2.1 and 5.1 Mt CO2-e (i.e. miss the target by up to 2/3) would do little to provide confidence to local government, the private sector, and the public, that the government is committed to the changes necessary to address the climate emergency. The Christchurch City Council supports strong climate action and is ready to partner with the government on its emissions reduction efforts.

#### Lack of clarity and certainty

The consultation document does not provide a clear direction for how New Zealand should reduce its emissions. The Christchurch City Council eagerly awaited the release of this important document, to help provide clear direction for New Zealand and to inform our Council efforts to reduce emissions. The Council recently adopted <u>Kia tūroa te Ao – Ōtautahi Christchurch Climate Resilience Strategy 2021</u>. One key action is to develop an emissions reduction pathway for our district. However, this consultation document does not provide the needed clarity for the Council or our community to help guide development of that plan. Rather, the consultation document provides a list of current actions and policies, and lists potential options being explored by government (most of which have already been consulted on by the Productivity Commission, Climate Commission and other agriculture, waste and transport consultations), with little information about how actions will be implemented, or which should be prioritised.

#### Local government's role in delivering the plan

Local government is ready and willing to take an active role in reducing emissions from its own operations and to support local communities to reduce their emissions. To achieve this, central government must provide the enabling polices, frameworks and incentives (as well as disincentives)

where necessary), that can drive national action and support local implementation. To achieve the pace and scale of change needed to reach our targets, we need a coordinated and aligned effort. Partnerships and clear roles and responsibilities will be vital.

It is unclear who would be better placed than local government to help deliver on some of the major initiatives outline in the discussion document. Partnering with iwi/Māori and the private sector are rightfully highlighted as important, but we believe that local governments' role has not been sufficiently acknowledged. Local government will be crucial to the successful implementation of many the proposed policies and actions in the document, especially the transportation, urban planning, waste, forestry, and just transition sections, and more detail on how this will occur, and on funding implications is required in the final plan.

However, it seems that references to partnerships with local government are lacking and are almost written as an afterthought – where they are included at all. For example, the funding and finance section (p.35) could include reference to funding local government to (co)deliver projects or programmes in pursuit of the plan's goals.

The Council supports enabling national legislation which would enable Councils greater flexibility to introduce policies locally (including things like pricing, road reallocation, congestion charges etc.), to help address emissions in a way that would work for our communities.

From a legal perspective, the Council advocates for more detail in the final Emissions Reduction Plan about the role of local government in the plan's implementation. Legislation requires the Ministry for the Environment to include this level of detail:

- Section 5ZN(c) of the Climate Change Response Act 2002 provides
  - **5ZN 2050 target and emissions budget are permissive considerations** If they think fit, a person or body may, in exercising or performing a public function, power, or duty conferred on that person or body by or under law, take into account—
    - •••
    - (c) an emissions reduction plan.
- Council is a body that exercises or performs public functions, powers or duties under law.
- Therefore the emissions reduction plan will be a permissive consideration for Council when exercising its functions.
- If the Emissions Reduction Plan is insufficiently detailed on local government's role in implementing the plan, then Council is unable to incorporate the Emissions Reduction Plan into its decision-making, even if it wanted to do so.
- If the Ministry for the Environment fails to provide sufficient detail in the Emissions Reduction Plan for local government (or public decision makers), it will be frustrating Parliament's intention when they legislated this provision.

Council also requests that the Plan recommend that the Minister for Local Government issue guidance under s 5ZO for the Department of Internal Affairs to take a more active and coordinating role in assisting local government to achieve emissions reductions, and to ensure consistency of approach between local governments. The Department of Internal Affairs has issued policy documents on climate change to-date, however these largely focus on adaptation and resilience, rather than emissions reductions.

## Funding

The consultation document provides little detail on funding for key proposals and policies suggested to help reduce emissions – despite stating that '*climate change requires a step change in how we* 

*approach financing*' (page 34). Without more certainty around funding commitments from central government, it is unlikely that local government or the private sector will have confidence to increase their own climate commitments.

It is noted that currently proposed policies will leave a significant gap between actual emissions reductions, and our international commitments (our NDC), which will require enormous amounts to be paid towards international offsets in the future (estimates of \$1billion per year quoted in media). We would prefer that the central government invest a higher proportion of that money in New Zealand now to drive greater emissions reductions at home.

Streamlining funding for initiatives such as cycleways would help empower local government to speed delivery of much needed infrastructure that will help decrease emissions. Our experience in receiving shovel ready funding was much better than the process to access transport funding through Waka Kotahi – which has an unnecessarily long lead times, and funding is often not well-aligned with local (or national) emissions reduction goals.

While it is crucial that funding is directed towards initiatives which enable people to reduce their emissions (such as cycleways), it is just as vital to stop funding things which will result in increased emissions. For example, continuing to fund additional lanes on highways will not incentivise people to use their car less, or switch to public transport.

The Christchurch City Council also notes that the recently released National Land Transport Programme 2021 to 2024, allocated \$2.8 billion for public transport in Auckland, \$1.2b for Wellington and only \$246m in Christchurch. As New Zealand's second largest city, we would like to see far greater funding for public transport in the future, in order to assist with emission reduction efforts.

## **Policy alignment**

The Council would like to see greater co-ordination of policy direction across central government relating to emissions reduction. Presently there are seemingly conflicting outcomes sought from various policy statements on transport and urban development which impede real progress being made to reduce emissions. For example, enabling continued greenfield sprawl without requiring public transport links means people having to drive further and further to work which increases emissions and congestion. Even the recent announcement to allow three storey residential units anywhere in the city is likely to lead to 'scattered intensification', which undercuts efforts elsewhere to focus intensification around integrated public transport routes. It's not clear enough in the consultation document how work on the emissions reduction plan is aligning with other work programmes, in particular the reform of the Resource Management system, work on the National Policy Statement-Urban Development and development of the National Adaptation Plan.

## Prioritise actions and evidence based decision making

The Draft Emission Reduction Plan does not prioritise actions or programmes of work, and only lightly touches on dependencies and the sequencing of activities. To build a robust programme government will need to identify which actions are able to deliver the greatest emission reductions, for the least cost and the greatest co-benefit. Identifying impactful actions and quick wins together with a clear view of dependencies and sequencing, will help to build momentum and confidence for implementation of the Plan. Council also supports the principles proposed in this Plan, (e.g. for a just transition, to be evidence based, to be ambitious, to uphold Te Tiriti principles and promote cobenefits), however it is not clear how these lenses have, or will be applied.

## **Raising minimum standards**

In 2020 the government (along with the Christchurch City Council and many other local authorities), declared a climate emergency. While we acknowledge the need for good public policy to include incentives and education to encourage 'better' voluntary choices, we believe higher regulatory standards are needed across a range of products to meet the urgency of the crisis. For example, higher standards are needed for vehicle emissions, buildings, appliances and electronic equipment, waste and F-gases.

Higher minimum standards are required for products which produce greenhouse gas emissions (either directly like car exhaust emissions, or indirectly through electricity consumption), especially where there are lower emission options available at similar prices. More efficient products will save consumers money over time, and reduce emissions.

Efficiency standards need to be regularly reviewed to ensure that standards are keeping pace with technical advancements, and the falling price of alternative products. For example, in the last decade the price has rapidly dropped for LED lightbulbs (which last much longer and use far less energy than incandescent bulbs). This now means consumers can replace old incandescent bulbs with LED bulbs and recover the additional purchase price from electricity bill savings in one year, while reducing their (and the country's) carbon footprint. Therefore, it may be time to set a date for ceasing the sale of inefficient incandescent lightbulbs.

Banning the sale of the highest emitting products, where comparative lower emitting products are available such as for F-gases, will also be needed to eliminate harmful and outdated products.

| Questions by section  | Council Response  |
|---|---|
| Meeting the net-zero challenge  |   |
| Transition pathway  |   |
| <ol> <li>Do you agree that the<br/>emissions reduction plan should<br/>be guided by a set of principles? If<br/>so, are the five principles set out<br/>above, the correct ones? Please<br/>explain why or why not.</li> </ol>          | We support the set of principles guiding the development<br>of the Emissions Reduction Plan.<br>The Christchurch City Council considers 'A fair, equitable<br>and inclusive transition' to be an especially important<br>principle, which needs to be embedded throughout the<br>final Emissions Reduction Plan (the Plan).   |
| 2. How can we enable further<br>private sector action to reduce<br>emissions and help achieve a<br>productive, sustainable and<br>inclusive economy? In particular,<br>what key barriers could we remove<br>to support decarbonisation? | The private sector requires certainty from government<br>policies to give it the confidence to invest.<br>The private sector will not want to shoulder the burden<br>of transition without significant government support. The<br>government needs to significantly increase funding<br>towards climate action, to signal it's a serious partner for<br>private investors.<br>Page 14 states 'no additional policies' under the Finance<br>and Funding section – this will not build any confidence<br>that the government is serious about increasing the<br>investment to accelerate emissions reduction efforts.<br>The ETS also needs to be reformed with a hard cap on<br>units which match our emissions budgets. This will<br>increase the price of units and make the private sector<br>consider decarbonisation options earlier than if the<br>government artificially delays the pain of price increases<br>on carbon polluting industries. |
| 3. In addition to the actions<br>already committed to and the<br>proposed actions in this<br>document, what further measures<br>could be used to help close the<br>gap?   | The government needs to lead boldly and display some<br>urgency. Delaying the emissions reduction plan sends the<br>signal that it's not really a government priority.<br>Until the government starts investing heavily in<br>renewable energy and low emission transport, and<br>address agricultural emissions, the country will continue<br>to lock itself into a high emissions future. The percentage<br>of renewable energy is actually dropping, and the   |

|  | government is still increasing funding for fossil fuel<br>transport options at a higher rate than for active and<br>public transport.<br>New Zealand is losing credibility as a leader on climate<br>action and we will miss opportunities if we continue to<br>prioritise other areas ahead of decarbonising the<br>economy.  |
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| 4. How can the emissions<br>reduction plan promote nature-<br>based solutions that are good for<br>both climate and biodiversity?  | Do more to incentivise permanent native forests as a way<br>to sequester carbon and make it easier to enter native<br>regeneration into ETS.   |
| 5. Are there any other views you<br>wish to share in relation to the<br>Transition Pathway?  | We are disappointed not to see an actual emissions<br>reduction plan instead of a high level transition pathway.   |
| Helping sectors adapt  |  |
| 6. Which actions to reduce<br>emissions can also best improve<br>our ability to adapt to the effects of<br>climate change?   | increasing and retaining native forest and wetlands.   |
| <ol> <li>Which actions to reduce<br/>emissions could increase future<br/>risks and impacts of climate<br/>change, and therefore need to be<br/>avoided?</li> </ol>   | There are few risks  |
| Working with our Tiriti partners   |  |
| 8. The Climate Change<br>Commission has recommended<br>that the Government and iwi/Māori<br>partner on a series of national<br>plans and strategies to<br>decarbonise our economy. Which,<br>if any, of the strategies listed are a<br>particular priority for<br>your whānau, hapū or iwi and why<br>is this? | Given Ngāi Tahu has the largest Takiwā of any iwi across<br>Aotearoa, we should expect that Ngāi Tahu are intimately<br>involved in working with the Crown in further developing<br>the National level input of Iwi/Māori toward developing<br>the various strategies in relation to the NZ Emissions<br>Reduction Plan, and in particular toward addressing<br>Māori-led or Māori oriented solutions for some of the<br>strategies. This is fundamental to the Ngāi Tahu<br>perspective of Te Ao Māori and Mātauranga Māori within<br>its Takiwā. Whilst some strategies are more relevant for<br>stronger Māori engagement than others, we don't think<br>there are any that would be excluded from input. |
| 9. What actions should a Māori-<br>led transition strategy prioritise?<br>What impact do you think these<br>actions will have for Māori<br>generally or for our emission<br>reduction targets? What impact<br>will these actions have for you?   | Actions which focus on building capacity, increase<br>funding opportunities, and reduce inequities for Māori<br>should be prioritised.   |
| 10. What would help your whanau,<br>community, Māori collective or<br>business to participate in the<br>development of the strategy?   | More resourcing would help Māori participate in the<br>process.<br>Māori at local authority/regional level have little/no<br>capacity to engage, partner, co-design or collaborate   |

|   | with local/regional authorities primarily because of that<br>lack of resourcing (funding, capacity,<br>inequities). Whatever is developed nationally to support<br>and resource Māori must be replicated at local<br>level. Notwithstanding these fundamental flaws, Maori-<br>led, or Māori specific and affordable strategies <u>must be</u><br><u>driven</u> on a 'By Māori for Māori context with aligned<br>support mechanisms from national and local/regional<br>authority levels. The Te Ao Māori and Mātauranga Māori<br>perspective is equally important to the sciences and<br>technical viewpoint, and when combined, new<br>possibilities emerge for the willing.   |
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| 11. What information would your<br>Māori collective, community or<br>business like to capture in an<br>emissions profile? Could this<br>information support emissions<br>reductions at a whanau level?  | Whilst there is a focus here on outcomes specifically for<br>Māori, there are, under a true Te Tiriti partnership,<br>mutually beneficial economic, leadership and kaitiaki<br>obligations to realise mutually beneficial economic<br>opportunities.   |
| 12. Reflecting on the Commission's<br>recommendation for a mechanism<br>that would build<br>strong Te Tiriti partnerships, what<br>existing models of partnership are<br>you aware of that have resulted in<br>good outcomes for Māori? Why<br>were they effective?   | In acknowledging the intent of the Crown to embed Te<br>Tiriti o Waitangi principles into future emissions<br>reduction plans, the Crown must give clear guidance to<br>local authorities as to what obligations this imposes at<br>local/regional authority level when planning and<br>delivering localised strategies, particularly in respect to<br>the level of resourcing (funding) that a local/regional<br>authority is expected to provide to assist Māori to<br>partner, engage and continue collaboration throughout<br>planning and implementation. Similarly, local/regional<br>authorities need to be ready to change the way they do<br>business to incorporate a broader partner base, but<br>particularly toward accepting the roles and obligations of<br>working as partners and collaborating with Māori. |
| Making an equitable transition  |  |
| The Commission recommends developing<br>an Equitable Transitions Strategy that<br>addresses the following objectives:<br>partnership with iwi/Māori, proactive<br>transition planning, strengthening the<br>responsiveness of the education system,<br>supporting workers in transition, and<br>minimising unequal impacts in all new<br>policies.<br>13. Do you agree with the<br>objectives for an Equitable<br>Transitions Strategy as set out by<br>the Climate Change Commission?<br>What additional objectives should<br>be included? | We agree with the objectives of the Equitable Transition<br>Strategy as described. However, we consider that<br>developing the Equitable Transition Strategy separately<br>from the Emissions Reduction Plan potentially allows a<br>Plan to be developed which is inconsistent with the goals<br>of an equitable transition.<br>The Emissions Reduction Plan should have an equitable<br>transition as one of its core principles – and all actions<br>and policies included in the Plan should also have been<br>considered through that lense before being included.<br>Pathways or policies that undermine an equitable<br>transition should not be included.  |

| 14. What additional measures are<br>needed to give effect to the<br>objectives noted by the Climate<br>Change Commission and any other<br>objectives that you think should be<br>included in an Equitable<br>Transitions Strategy?                                    | There also needs to be regular monitoring and reporting<br>on the impacts of the transition, to ensure the actual real<br>world impacts are assessed, and our approach can be<br>constantly improved for affected communities and<br>sectors.   |
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| The Commission suggests that the<br>Equitable Transitions Strategy should be<br>co-designed alongside iwi/Māori, local<br>government, regional economic<br>development agencies, businesses,<br>workers, unions, the<br>disability community and community<br>groups. | We agree the Equitable Transition Strategy needs to be<br>created in partnership with Māori, but also needs to<br>include input from all sectors of society to be effective.<br>The more views it incorporates, the more effective it will<br>be for society as a whole.  |
| 15. What models and approaches<br>should be used in developing an<br>Equitable Transitions Strategy to<br>ensure that it incorporates and<br>effectively responds to the<br>perspectives and priorities of<br>different groups?                                       |   |
| 16. How can Government further<br>support households (particularly<br>low-income households) to reduce<br>their emissions footprint?  | Provide easy to understand information on where most<br>emissions come from and a few basic (and affordable)<br>things people can do to reduce their footprint.<br>But most importantly, the government is in the unique<br>position of being able to provide or fund low-emissions<br>alternatives for the public. For example – incentives for<br>active travel (e.g. electric bikes for each household),<br>funding public transport improvements or cycleways<br>which provide people low-emission alternatives to<br>driving fossil fuel vehicles. Decarbonising the electricity<br>grid is another action which would enable families to<br>lower their carbon footprint. |
| 17. How can Government further<br>support workers at threat of<br>displacement to develop new skills<br>and find good jobs with minimal<br>disruption?  | Provide free training, and boost apprenticeships for new low-emission jobs.   |
| 18. What additional resources,<br>tools and information are needed<br>to support community transition<br>planning?  | Community based approaches will be required in areas<br>where employment is dominated by high emission<br>industries.<br>The government may need to incentivise suitable low-<br>emission firms to locate to regions where there will be<br>high employment needs.  |
| 19. How could the uptake of low-<br>emissions business models and<br>production methods be best<br>encouraged?  | Incentives could be provided for businesses that rapidly<br>transition to low-emission alternatives.<br>Greater support could also be provided to social<br>enterprises which focus on helping the transitions to a<br>low emission, circular economy. For example,   |

|   | Kilmarnock Enterprises in Christchurch employs people<br>to provide local recycling solutions, including stripping<br>old computers and electrical equipment.   |
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| 20. Is there anything else you wish to share in relation to making an equitable transition?   |   |
| Aligning systems and tools  |   |
| Government accountability and   |   |
| coordination  |   |
| 21. In addition to the Climate<br>Change Commission monitoring<br>and reporting on progress, what<br>other measures are needed to<br>ensure government is held<br>accountable?  | It is vital that all government departments / agencies are<br>required to produce emission reduction plans that align<br>with NZ emission budgets and targets.<br>For example, the Ministry of Transport released a<br>discussion document earlier this year proposing four<br>potential options to reduce transport emissions – yet<br>three of the four options were insufficient to meet its own<br>targets. Such plans should no longer even be considered.   |
| 22. How can new ways of working<br>together like mission-oriented<br>innovation help meet our<br>ambitious goals for a fair and<br>inclusive society and a<br>productive, sustainable and<br>climate-resilient economy? | Mission orientated goals enable innovative ideas to solve<br>complex problems. We support this approach as it allows<br>a number of options to be explored without pre-<br>determining the types of actions which would best<br>achieve the goal, opening new opportunities and<br>pathways.  |
| 23. Is there anything else you wish<br>to share in relation to government<br>accountability and coordination?   | It is vital that we have an ambitious, coordinated and<br>aligned whole-of-government response to climate<br>change. Climate change will affect every ministry in some<br>way, so enabling frameworks, capability building and<br>tools are needed to help ministers and staff across the<br>different ministries to adopt consistent approaches.<br>These approaches should be shared so regional and local<br>government and business sectors may also benefit (for<br>example procurement guidelines, cost benefit analysis,<br>decision support tools and monitoring and reporting<br>approaches).<br>The Council fully supports central government leadership<br>shown through the Carbon Neutral Government<br>Programme. This will have numerous benefits and will be<br>an important catalyst for business through government<br>procurement and contracting efforts. |
| Funding and financing   |   |
| 24. What are the main barriers or<br>gaps that affect the flow of private<br>capital into low-emissions<br>investment in Aotearoa?  | Lack of incentives from the government for investing in<br>low-emission solutions, combined with those who<br>continue to invest in high emitting sectors being<br>effectively sheltered from the true costs of the harm they<br>perpetuate through high emissions. If the costs of<br>pollution don't fall on polluters (or investors), they will be<br>less willing to change. If it is cheaper to simply purchase<br>offsets at an artificially low price than to pay for the true   |

|  | cost of emissions, businesses are unlikely to be pro-  |
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|  | active in reducing their emissions.  |
|  | Currently the government is focusing all of its offsetting<br>efforts towards forestry. However, offsetting using<br>projects that reduce emissions, increases significantly<br>the number of opportunities to limit domestic emissions.<br>For example, the Burwood Landfill Gas project that has<br>successfully been powering civic buildings in<br>Christchurch since 2010 was supported through the<br>Government's Projects to Reduce Emissions scheme.<br>Such approaches will directly encourage innovation and<br>investment in the solutions needed. |
| 25. What constraints have Māori<br>and Māori collectives experienced<br>in accessing finance for climate<br>change response activities?        |  |
| 26. What else should the<br>Government prioritise in directing<br>public and private finance into<br>low-emissions investment and<br>activity? | Government needs to lead the way by clearly showing<br>where it intends to invest itself, and inviting others to join<br>it.<br>Otherwise it needs to provide incentives (e.g. tax,<br>subsidies etc.) to make investment in low-emission<br>technology more attractive than continued investment in<br>high emissions industries.   |
| 27. Is there anything else you wish<br>to share in relation to funding and<br>financing?   | On page 34, your opening statement on Funding and<br>Financing is that 'Climate change requires a step change<br>in how we approach financing', and yet no new policies<br>for funding are provided in the document. The summary<br>on page 14 simply states the Emissions Reduction Plan<br>will reflect work currently underway. Funding and<br>Financing will ultimately underpin the entire effort to<br>reduce emissions in New Zealand, so this approach is<br>unlikely to lead to significant change in the public or<br>private sector.                |
| Emissions pricing  |  |
| General Comments   | Government control of the emissions price in New<br>Zealand is not letting the market adequately reflect and<br>respond to this price. For a market mechanism to work it<br>needs to be determined by the market place. We suggest<br>removing the artificial ceiling on the New Zealand carbon<br>price to help drive innovation and a low emission<br>economy.   |
| 28. Do you have sufficient<br>information on future emissions<br>price paths to inform your<br>investment decisions?                           | No - local government does not have sufficient guidance<br>on price expectations and so is less able to take this into<br>account in decision making. We support the submission<br>recommendation from Taituarā, which calls for 'the<br>publication and regular review of long-term abatement<br>values based on the price of carbon' to help local<br>government and others inform their investment<br>decisions.  |

|  | As an example, current government estimates and<br>guidance appears to be outdated, because the price is<br>currently higher than the forecasts and forecasts vary<br>greatly (e.g. Parliamentary Commission for the<br>Environment medium ambition \$50 per tonne CO2-e,<br>MFE upper range \$50 per tonne CO2-e, yet the current NZ<br>price is \$65 per tonne CO2-e from CommTrade).  |
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| 29. What emissions price are you<br>factoring into your investment<br>decisions?   | The Council is looking to develop a policy to incorporate<br>carbon pricing into investment decisions.<br>Local government needs better decision support tools<br>and cost benefit analysis tools, to more consistently<br>factor in the future cost of carbon and climate<br>implications of decision-making. This is especially<br>needed when long-term investments are being made. For<br>cost effective delivery, these tools could be developed<br>nationally and then shared throughout New Zealand.                            |
| 30. Do you agree the treatment of<br>forestry in the New Zealand<br>Emissions Trading Scheme (NZ<br>ETS) should not result in a delay, or<br>reduction of effort, in reducing<br>gross emissions in other sectors of<br>the economy?   | We agree that gross emissions reductions should be the<br>focus of government policy, with offsets from forestry<br>only used for residual emissions in hard to abate sectors.   |
| 31. What are your views on the<br>options presented above to<br>constrain forestry inside the NZ<br>ETS? What does the Government<br>need to consider when assessing<br>options? What unintended<br>consequences do we need to<br>consider to ensure we do not<br>unnecessarily restrict forest<br>planting? | We agree that there should be limits introduced for the<br>number of forestry units surrendered from non-forestry<br>participants under the ETS.<br>Increasing the value of units for permanent native forest<br>compared to exotic forestry may also incentivise more<br>long term sequestration.   |
| 32. Are there any other views you<br>wish to share in relation to<br>emissions pricing?  | Government control of the emissions price in New<br>Zealand is not letting the market adequately reflect and<br>respond to the true price of carbon. For a market<br>mechanism to work it needs to be determined by the<br>market place. We suggest removing the artificial ceiling<br>on the New Zealand carbon price to help drive innovation<br>and a low emission economy.   |
| Planning   | The form and location of residential development has a<br>great influence on the long-term emissions from a city.<br>Well-located residential intensification, for example<br>around key activity centres, which have a diversity of<br>work, retail, recreational and transport opportunities<br>nearby, would enable people to more easily access their<br>daily needs. Current moves for wholesale and distributed<br>intensification could undermine the thoughtful location<br>of people and so drive up emissions because of the |

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|  | increased need to travel (e.g. changes imposed by the Resource Management (HUD) Amendment Bill.  |
|  | In addition, encouraging intensification in locations<br>known to be vulnerable to sea level rise or flooding,<br>would ultimately result in greater risks for the<br>community and greater levels of emissions when these<br>buildings and infrastructure needed to be repaired or<br>ultimately moved due to hazards. However, most of<br>these areas should be addressed by National Policy<br>Statement – Urban Design Qualifying Matters.                   |
|  | Abolishing the need for green outdoor spaces around<br>buildings will exacerbate flood risks, through the<br>increase of impervious surfaces, add to urban<br>overheating (as shade and greenspaces cool<br>neighbourhoods), and is counter to restoring nature and<br>supporting wellbeing in our cities.   |
|  | These points and more, were made in the Council's<br>submission on the proposed Resource Management<br>(HUD) Amendment Bill. But they reinforce the need to<br>have policy alignment when it comes to reducing<br>emissions and growing resilience.  |
|  | The government needs to be a leader in sustainable<br>developments itself. Kāinga Ora has made good progress<br>in its new developments, and more could be done to trial<br>innovate new ideas in its developments.  |
| 33. In addition<br>to resource management reform,<br>what changes should we prioritise<br>to ensure our planning system<br>enables emissions reductions<br>across sectors? This could include                          | The Emissions Reduction Plan Discussion Document<br>notes that the extent of the current emissions impact of<br>urban areas is unknown (p.42). We would strongly advise<br>that this data is collated, so that impacts of<br>intensification on emissions profiles can be better<br>understood and addressed.  |
| partnerships, emissions impact<br>quantification for planning<br>decisions, improving data and<br>evidence, expectations for crown<br>entities, enabling local<br>government to make decisions to<br>reduce emissions. | The Emissions Reduction Plan should also contemplate<br>measures to reduce and/or offset emissions that are<br>created as part of the drive for increased residential<br>intensification.  |
|  | One way that it could do this is through the promotion or<br>protection of green space either by private property<br>owners or by local government. We know that in<br>Christchurch, intensification of residential properties<br>often comes at the expense of existing green space and<br>green assets e.g. trees, with limited/no requirement to<br>reinstate or replace these meaningfully. Proposed<br>changes as part of the Resource Management (Enabling |
|  | Housing Supply and Other Matters) Amendment Bill will  |

|                                   | further reduce the need for landscaping from a minimum     |
|-----------------------------------|--|
|                                   | of 20% of site coverage to no minimum.                     |
|                                   |  |
|                                   | A sole focus on housing growth can resulting in poor       |
|                                   | social, environmental and economic wellbeing               |
|                                   | outcomes. Poorly planned and rapid greenfield              |
|                                   | expansion locks in a legacy of high input and high         |
|                                   | footprint, neighbourhoods and homes. Development           |
|                                   | must be integrated with transport and infrastructure and   |
|                                   | be designed to reduce the need for private vehicles (e.g.  |
|                                   | 15 minute neighbourboods and growth in areas with          |
|                                   | existing infrastructure and around key activity centres)   |
|                                   | The government's drive for increased residential           |
| 34. What more do we need to do to | intensification is understood. More work needs to be       |
| promote urban intensification,    | dono to understand the impacts on emissions as above       |
| support low-emissions land uses   | the data is not yet well understood                        |
| and concentrate intensification   | The gas and yet well understood.                           |
| around public transport and       | (Fach line Housing Council) Areas depart Billwill if       |
| walkable neighbourhoods?          | (Enabling Housing Supply) Amendment Bill Will, if          |
|                                   | enacted, enable increased residential density of up to     |
|                                   | three houses, of up to three storeys, on single sections   |
|                                   | across fier 1 urban areas. Where previously councils       |
|                                   | focused increased residential density around public        |
|                                   | transport corridors and within walking distance of key     |
|                                   | activity centres, the blanket city-wide approach           |
|                                   | proposed in the Bill will lead to new development away     |
|                                   | from public transport and key activity centres, contrary   |
|                                   | to the goals of increasing public and active transport     |
|                                   | uptake and reducing emissions.                             |
|                                   |  |
|                                   | To be more efficient and consistent, we encourage the      |
|                                   | development of national tools and approaches that can      |
|                                   | help decision making at the local level (e.g. tools that   |
|                                   | help understand the environmental footprint of urban       |
|                                   | development decisions). One such tool (Envision            |
|                                   | Scenario Planning Tool) has been developed by              |
|                                   | Canterbury University through the National Science         |
|                                   | Challenge – Better Homes Towns and Cities programme.       |
| 35. Are there any other views you | The Discussion Document emphasises a need for a            |
| wish to share in relation to      | joined-up approach between central and local               |
| planning?                         | government to decrease emissions (p.18, p.57): "To get     |
| P                                 | started, we need to empower central and local              |
|                                   | government, iwi/Māori, communities and business to         |
|                                   | collaborate on a multi sector approach to reducing         |
|                                   | emissions" (p.18).   |
|                                   | However, it is clear that there are overlapping objectives |
|                                   | between the emissions reduction programme and other        |
|                                   | key work underway such as the programme of Resource        |
|                                   | Management Act reform; National Policy Statement on        |
|                                   | Urban Development; and the recently announced              |
|                                   | changes to medium density as part of the Resource          |
|                                   | Management (Enabling Housing Supply and Other              |
|                                   | Matters) Amendment Bill.                                   |

|   | Further work is needed to explore and resolve the<br>apparent tensions in national direction and policies. The<br>Council recognises that there are challenges in achieving<br>multiple objectives; greater understanding of how these<br>policies will integrate is needed. For example, actions to<br>increase housing supply by building up and out can<br>create a tension with actions to reduce greenhouse gas<br>emissions and protect productive land, if urban areas<br>sprawl outwards. In addition, direction to intensify<br>existing residential areas can come at the expense of<br>trees and greenspace – key assets in the pursuit of<br>emissions reduction.<br>The Government needs to provide strong support for<br>local government decisions on land use and<br>transport/infrastructure integration, for example by<br>prohibiting urban development outside of designated<br>growth corridors, and addressing housing pressures first<br>and foremost through increased density. The National<br>Policy Statement on Urban Development has encouraged<br>a number of plan changes (approximately 20) in Selwyn<br>District for Greenfield residential urban expansion. If<br>these are approved they will increase housing supply -<br>however they will also increase emissions from transport<br>because of their greenfield location.<br>We need to consider the emission and resilience<br>implications of planning decisions and the potential for<br>low carbon adaptation options. Designing infrastructure<br>with both an adaption and resilience lens will be more |
|---|---|
| Basanda asianaa andinaa adian   | cost enective.  |
| Research, science and innovation  |   |
| General comments  | Data both private and public data required to inform and  |
| 36. What are the big challenges,<br>particularly around technology,<br>that a mission-based approach<br>could help solve?                     | Data, both private and public data required to inform and<br>stimulate ideas.<br>Attracting the right people into the mission; these need<br>to be a combination of both public and private sector –<br>but let industry lead, supported by government.<br>This cannot just be the same players – ensuring this is not<br>only Wellington focused, the regions need to be<br>empowered.<br>There needs to be an open knowledge base.<br>Rapid prototyping should be promoted, and successful<br>initiatives scaled. De-risk the environment.  |
| 37. How can the<br>research, science and innovation<br>system better support sectors such<br>as energy, waste or hard-to-abate<br>industries? | government and economic development agencies who<br>have the knowledge and the relationships at a regional<br>level.  |
| 38. What opportunities are there in areas where Aotearoa has a unique   | Research into solutions for agricultural emissions are one<br>area Aotearoa has a unique advantage with innovation<br>hubs such as those in Lincoln already looking into  |

| global advantage in low-emissions<br>abatement?  | solutions which could have local, and then global<br>benefits.<br>Green power, hydro power.<br>Geographic variances allow us to trial different<br>approaches.<br>Aotearoa's size supports rapid delivery and accelerated<br>innovation.<br>City and regional councils have the opportunity to<br>collaborate with industry to come innovative<br>technologies and products as well as opportunities to co-<br>create scalable solution.  |
|--|---|
| 39. How can Aotearoa grow<br>frontier firms to have an impact on<br>the global green economy? Are<br>there additional requirements<br>needed to ensure the growth of<br>Māori frontier firms? How can we<br>best support and learn<br>from mātauranga Māori in the<br>science and innovation systems, to<br>lower emissions? | Show the pathways to success in order to grow frontier<br>firms. Help them to think 'big' – that the opportunities<br>are global. Create genuine collaborations between start-<br>ups and established industry players. Encourage local<br>government, economic development agencies and<br>regional councils to support frontier firms trailing new<br>technology and products. E.g. Use of red zone land in<br>Christchurch, access to waste streams etc.<br>Fit for purpose procurement processes to support<br>emerging technology and products are required.   |
| 40. What are the opportunities for<br>innovation that could generate the<br>greatest reduction in emissions?<br>What emissions reduction could<br>we expect from these innovations,<br>and how could we quantify it?   | Regions have a good handle on their local innovation<br>community. Support the establishment of cohorts that<br>are already working together to solve these problems –<br>such as agriculture, transport, waste, energy etc.  |
| 41. Are there any other views you<br>wish to share in relation to<br>research, science and innovation?   | ChristchurchNZ has a clustering programme of<br>'supernodes' which could be leveraged to support<br>transitioning to a low emission and climate resilient<br>future. One of the supernodes specially targets Food,<br>Fibre and Agritech.<br>There is an opportunity to develop a regional or national<br>'Digital Twin' (essentially a 3D virtual model of an area<br>including the built environment). This would provide an<br>ability to combine complex and previously disparate<br>datasets and perform simulations that could help<br>support the adoption of new and more sustainable<br>technology and approaches.             |
| Behaviour change   |   |
| General comments   | It is vital that Central Government leads a national<br>awareness raising and education campaign about<br>climate change and the need to act. This will need to be a<br>significant and sustained effort, much like efforts to<br>reduce harm on our roads or smoking. This campaign<br>should appeal to core kiwi values and have a clear and<br>simple call to action – linked to support available<br>nationally to take action. It should also share stories of a<br>diverse range of people taking action - businesses,<br>households, communities, schools, iwi and farmers.<br>Local government can help supply stories and case |

|  | studies and foster connections with local networks and groups.   |
|--|--|
|  | A good example of a joined-up national approach is the<br>Road Safety Strategy "Road to Zero"<br><u>https://www.nzta.govt.nz/safety/what-waka-kotahi-is-<br/>doing/nz-road-safety-strategy/</u><br>which has a combination of advertising, resources,<br>partnership programmes, grant funding, programme<br>development and implementation. This, plus a multi-<br>year commitment of resources over decades, would be<br>the minimum order of magnitude required.  |
|  | The effectiveness of Government funded public<br>campaigns like Genless should be measured in terms of<br>the practical outcomes achieved – we believe the Genless<br>advertising is confusing and may not be resulting in<br>awareness or behaviour change. It may also only be<br>appealing to those already active. The Mercury Energy<br>'say goodbye' campaign, is delivering a much clearer call<br>to action for a wider audience (focused on electric<br>vehicles).  |
|  | We support the concept of a behaviour change fund to<br>allow organisations throughout New Zealand reach<br>audiences at the local level in innovative ways. It will be<br>important that this fund has sound measures of success<br>and aids wider learning from the projects supported (to<br>enable the sharing of good practice). It will be vital that<br>MfE adopts enabling fund management processes to<br>keep transaction costs low for organisations who apply<br>and for MfE.  |
| 42. What information, tools or<br>forums would encourage you to<br>take greater action on climate<br>change? | The science of climate change and sustainability (e.g. the<br>challenges and solutions) must be taught in schools as<br>part of the NZ Curriculum. If we are not equipping future<br>generations with this core knowledge, then we will fail to<br>make the lasting and transformational changes needed.<br>This was a core demand from the recent School Strike for<br>Climate – to include climate change in the curriculum.   |
|  | Schools can also be role models of sustainability for their<br>students and their communities. This can be achieved by<br>the way schools are designed and operated, as well as<br>the way learning is shared with students and the<br>community. For example, all schools should manage<br>their waste, be energy efficient, encourage sustainable<br>travel behaviours, conserve water and encourage the<br>growing and eating of healthy food. Schools and early<br>childcare centres operating in this way will be powerful<br>community education facilities. |

|   | Schools can also deliver community education through<br>evening classes and courses. This previously occurred<br>with the help of government funding for community<br>education. An example of this was the Household<br>Sustainability courses taught by community facilitators,<br>trained by the <u>Sustainable Living Education Trust</u> .   |
|---|---|
| 43. What messages and/or sources<br>of information would you trust to<br>inform you on the need and<br>benefits of reducing your<br>individual and/or your businesses<br>emissions? | A variety of different messengers will be required to reach<br>different sectors of the community. As shown with the<br>vaccination campaign, a strong central government<br>campaign will work for many people, but other and more<br>local voices are needed to reach everyone. Local<br>government and local community and business groups<br>are best placed to lead and coordinate local efforts.  |
|   | Positive case studies and stories of action taken by<br>households, schools, communities, businesses, iwi and<br>councils will be vital to grow momentum and encourage<br>others to act. We need plenty of different forums to<br>share, celebrate and encourage positive action. These<br>stories could be collected and curated nationally and<br>send out to key networks to share with their<br>communities. Partnerships with mainstream media will<br>need to be fostered e.g. " <u>The Forever Project</u> " run by<br>Stuff is a useful way to share stories. |
|   | Behaviour change is not the same as mass marketing.<br>The Warm-up Kiwi Homes insulation subsidy or the EV<br>Rebate are essentially behaviour change approaches.<br>These specific and practical approaches should continue<br>or be expanded and be complemented by a wider<br>communications approach that encourages uptake.  |
|   | Understanding and responding to core barriers will be<br>vital for successful behaviour change. National-level<br>research could be undertaken and shared with local<br>government and key influencers to more efficiently<br>support local delivery.   |
| 44. Are there other views you wish<br>to share in relation to behaviour<br>change?  | We support the efforts to establish a fund to drive<br>behaviour change, but it's important to continuously<br>compare this type of investment to walking and cycling<br>infrastructure or public transport investment, which will<br>enable and underpin the behaviours sought.<br>The government's current approach is silent on the need<br>to eat healthy, local and low carbon food choices.   |
| Moving Aotearoa to a circular economy   |   |
| General comments  | We agree with the core principles of a circular economy<br>MfE have set out, but would add that the system would<br>need to be powered by renewable energy for it to be<br>sustainable. The <u>Ellen Macarthur Foundation</u> is a leader<br>on circular economy approaches and have formed useful  |

|   | partnerships with industry and have guidance for<br>governments. Circular economy approaches must apply<br>to the biological cycle and the industrial cycle of<br>products. The current approach proposed by<br>government focuses only on the bioeconomy. To address<br>the industrial cycle, more emphasis is needed on product<br>stewardship and lifecycle responsibilities.   |
|---|--|
| 45. Recognising our strengths,<br>challenges, and opportunities,<br>what do you think our circular<br>economy could look like in 2030,<br>2040, and 2050, and what do we<br>need to do to get there?                        | We support the Government exploring and supporting<br>circular economy approaches in New Zealand because of<br>the many benefits that would be delivered. Local social<br>enterprises offer some great examples of purpose driven<br>businesses delivering more sustainable outcomes. For<br>example, <u>Cultivate Christchurch</u> grow food in the central<br>city, deliver food to local cafes using an electric bike and<br>collect and compost food scraps to feed the soil where<br>the food is grown. <u>Kilmarnock Enterprises</u> also provides<br>local recycling solutions through the ethical employment<br>of people with disabilities. |
| 46. How would you define the<br>bioeconomy and what should be in<br>scope of a bioeconomy agenda?<br>What opportunities do you see in<br>the bioeconomy for Aotearoa?   | The Climate Commission's definition on page 49 is fine.<br>New Zealand should be leaders in the Bioeconomy and<br>related technologies. An example of fostering<br>opportunities in this sector is reflected in the<br><u>Christchurch NZ Supernodes</u> programme. Canterbury is<br>positioning itself as a centre of excellence for the Food,<br>Fibre, and Agritech sectors.  |
| 47. What should a circular<br>economy strategy<br>for Aotearoa include? Do you agree<br>the bioeconomy should be<br>included within a circular economy<br>strategy?   | The bioeconomy can form part of the circular economy,<br>but the concept of the circular economy itself needs to be<br>wider – ultimately covering concepts that can be applied<br>to the entire economy.  |
| 48. What are your views of the<br>potential proposals we have<br>outlined? What work could we<br>progress or start immediately<br>on a circular economy and/or<br>bioeconomy before drawing up a<br>comprehensive strategy? |  |
| 49. What do you see as the main<br>barriers to taking a circular<br>approach, or expanding the<br>bioeconomy in Aotearoa?   | The significant proportion of products that are<br>manufacturing offshore limits our ability to influence the<br>design, regulate brand owners and limits our ability to<br>reprocess products or resources. In order to have a local<br>circular economy local manufacturing will be important.   |
| 50. The Commission notes the<br>need for cross-sector regulations<br>and investments that would help<br>us move to a more circular<br>economy. Which regulations and  |  |

| investments should we prioritise (and why)?   |  |
|---|--|
| 51. Are there any other views you<br>wish to share in relation to a<br>circular economy and/or<br>bioeconomy?   |  |
| Transitioning Key Sectors   |  |
| Transport   |  |
| General comments  | Most of the proposals to reduce transport emissions<br>would be supported by local governments across New<br>Zealand. The big issue is the lack of funding to make the<br>changes required.  |
|   | There are also very few details on how the proposed<br>transport emissions targets will be achieved. The<br>government needs to work more closely with local<br>government on the types of policies that are needed, and<br>provide far greater funding for implementing them.   |
|   | Transport is another area which would benefit from<br>clearer prioritisation of actions. Which actions will be<br>most efficient (and cost effective) in reducing emissions,<br>and how will they be implemented?  |
|   | A paradigm shift in the way the transport system is<br>funded in New Zealand will also be required to enable<br>the scale of change required. While the role out of<br>essential low-emission transport infrastructure needs to<br>be fast tracked, there needs to be an acknowledgement<br>that we can't simply build our way out of this with a<br>series of enormous and expensive infrastructure projects<br>– many of which will do little to actually reduce our<br>overall emissions.   |
| We are proposing <b>four new transport</b><br><b>targets</b> in the emissions reduction plan,<br>and are seeking your feedback.   |  |
| 52. Do you support the target to<br>reduce vehicle kilometres travelled<br>by cars and light vehicles by 20 per<br>cent by 2035 through providing<br>better travel options, particularly<br>in our largest cities, and associated<br>actions? | <ul> <li>We support this target. Note, our draft transport emission reduction calculations indicate that we will need to reduce vehicle kilometres travelled (VKT) in Christchurch City by 24% by 2030 to meet our net-zero emissions goal by 2045. While our target is slightly more ambitious, the Emissions Reduction Plan target roughly aligns to ours and is considered suitable.</li> <li>We support the associated actions, and we have the following additional comments: <ol> <li>On page 67, the plan says: "In the first budget period, we will: make regulatory changes to streamline public consultation requirements and</li> </ol> </li> </ul> |

make it easier for councils to trial street/road changes that support travel by public transport, walking, and cycling, including low-traffic neighbourhoods." We would welcome central government influence to support the Council to initiate such changes. We strongly support these actions, but there is a lack of detail proposed here. We suggest additional detail here to show how this would happen.

- 2. On page 66, the plan says "In the first budget period, we will: substantially increase funding for cycling and walking improvements". The current 2021-2024 National Land Transport Programme (NLTP) allocates only \$910m to walking and cycling improvements, or 4% of the total NLTP expenditure. Does this mean the Ministry of Transport (MoT) will aim to propose a much higher proportion of expenditure for walking/cycling improvements? The current NLTP still allocates a majority of funds to road uses, continuing our dependence on motor vehicles. We therefore also support the identification of higher public transport service and infrastructure funding. The current 2021-2024 NLTP allocates \$4,900m to public transport, or 20% of the total NLTP expenditure. We hope to see specific and significant increases to the funding proportions detailed. To achieve the targets, the government needs to re-prioritise away from road funding and towards active and public transport.
- 3. The plan proposes the development of a national public transport network. We support these efforts, but we advocate for higher priority of action within urban centres in the short term. We support development of a national public transport network in the long term as there is a need to establish and increase public transport frequency to urban centres outside Greater Christchurch to enable sustainable tourism. We are seeking detail for this action.
- 4. We support providing free public transport for community service and gold card holders as well as secondary and tertiary students. This will help to embed desirable low emission behaviours and help address equity issues.
- 5. Christchurch was not specifically mentioned in the congestion pricing actions. Congestion pricing is an initiative that Christchurch City is interested in investigating, and we would welcome assistance and legislative support in this area
- 6. On page 69, the plan seeks to "Require further roadway expansion and new highways to be

|                                  | consistent with climate change targets". We support         |
|----------------------------------|---|
|                                  | this goal, but it may not be specific enough to             |
|                                  | ensure the desired outcomes. Restricting 'roadway           |
|                                  | expansion' is vague, and it's not clear what projects       |
|                                  | opportunity here to restrict the space allocated to         |
|                                  | parking or vehicular traffic on new roads (non-             |
|                                  | highway). This might be best suited as an                   |
|                                  | additional action.  |
|                                  | For focus 1, an additional action with a clear requirement  |
|                                  | to follow the road design standards within the Aotearoa     |
|                                  | Urban Street Planning & Design Guide might be useful. A     |
|                                  | councils to follow through on best practice road designs    |
|                                  | The status guo still involves road designs that allocate a  |
|                                  | significant amount of space to parking and vehicular        |
|                                  | traffic.  |
|                                  | Finally, there needs to be a greater acknowledgement of     |
|                                  | the impacts that working from home can make on              |
|                                  | transport emissions reduction. The recent lockdowns         |
|                                  | home and MBIE could provide information and support         |
|                                  | for businesses who wish to explore more flexible work       |
|                                  | options for staff.  |
| 53. Do you support the target to | Yes we support this target and the associated actions,      |
| make 30 per cent of the light    | and would support an earlier target date if the             |
| vehicle fleet zero-emissions     | government introduced further policies and incentives to    |
| vehicles by 2035, and the        | More promotion of the savings consumers can gain from       |
| associated actions?              | driving an EV (compared to paying for petrol/diesel),       |
|                                  | combined with the need for less servicing and               |
|                                  | maintenance could encourage more people to consider         |
|                                  | purchasing an EV.   |
|                                  | While the focus on electric vehicles is important, our key  |
|                                  | focus at Christchurch City Council is on mode-shift (focus  |
|                                  | 1).   |
|                                  |   |
|                                  | We recommend expanding the proposed e-bike                  |
|                                  | iust for those with lower incomes. A widespread e-bike      |
|                                  | subsidy will be an important (and relatively inexpensive)   |
|                                  | policy lever that will allow us to tackle health challenges |
|                                  | as well as transport challenges.                            |
|                                  |   |
|                                  | currently rules related to the location and number of       |
|                                  | could also investigate mechanisms to limit on new petrol    |
|                                  | stations as the transition towards an electric fleet        |
|                                  | progresses. A 'sinking lid' type approach may work to       |
|                                  | help encourage the transition. An even bolder approach      |

|   | could be to ban fossil fuel advertising and sponsorship –   |
|---|---|
| 54. Do you support the target to<br>reduce emissions from freight<br>transport by 25 per cent by 2035,<br>and the associated actions?   | Similar to the approach previously taken with smoking.<br>Yes, we support this target and the associated actions. In<br>addition we suggest setting a 2032 target for all new and<br>used imported light and heavy duty trucks to be zero<br>exhaust emission vehicles - i.e. no new or used petrol,<br>diesel, hybrid and plug-in hybrid vehicles to be imported<br>after that date.<br>To support this we suggest implementing a clean truck<br>discount (feebate) scheme for imported, new and used<br>light and heavy duty trucks by the earliest practicable<br>date - focusing on providing a rebate discount for zero<br>exhaust emission, trucks and a fee for imported, new and<br>used petrol, diesel, hybrid and plug-in hybrid vehicles.<br>Greater effort is also needed to encourage freight to<br>move from trucks to rail and coastal shipping, and to<br>optimise freight logistics to ensure full loads and efficient<br>vehicle operation. |
| 55. Do you support the target to<br>reduce the emissions intensity of<br>transport fuel by 15 per cent by<br>2035, and the associated actions?  | Yes, we support this target and the associated actions.<br>This will be important because New Zealand has an old<br>vehicle fleet, and will reduce emissions for those not yet<br>able to purchase electric vehicles.   |
| 56. The Climate Change<br>Commission has recommended<br>setting a time limit on light<br>vehicles with internal combustion<br>engines entering, being<br>manufactured, or assembled in<br>Aotearoa as early as 2030. Do you<br>support this change, and if<br>so, when and how do you think it<br>should take effect? | We support a ban on importing, manufacturing, or<br>assembling internal combustion light vehicles by 2030, in<br>line with the United Kingdom - i.e. no new or used petrol,<br>diesel, hybrid or plug-in hybrid vehicles to be imported or<br>manufactured locally after that date.<br>The ban on internal combustion vehicles could be<br>supported by an increase in the feebate scheme to<br>improve affordability, and take place alongside a suite of<br>other measures to improve uptake of active and public<br>transport, and improve the equity of the transport<br>system.  |
| 57. Are there any other views you<br>wish to share in relation to<br>transport?   | <ul> <li>Christchurch City Council broadly supports the modeshift actions identified, but we would need these actions to be fully detailed, legislated, and implemented if we are to reach the specified targets.</li> <li>We require a significant increase in funding allocation towards walking, cycling, and public transport service and infrastructure in the National Land Transport Fund (NLTF).</li> <li>Often road trial projects face increased public concern when they are funded by local rates. In order to implement more trials, we require increased central government funding and directive legislation to implement these trials to achieve the significant amount of road space reallocation needed to achieve the specified targets. In addition to trials, we need additional funding support and increased design direction to enable successful non-trial projects.</li> </ul>  |

| <ul> <li>Specifically, we support working to implement the designs within the Aotearoa Urban Street Planning &amp; Design Guide. Strong and clear directives to follow these guidelines will enable us to follow through on best practice designs during the engagement process.</li> <li>We require increased detail surrounding the actions to restrict 'further roadway expansion' and require 'impact assessments'. Without clear and directive commitments, there is a risk that these actions will not result in emission reductions. We suggest utilising California Senate Bill 743 as an example of how to effectively direct a change in transport and land use assessment. We require central government to direct a clear change to using vehicle kilometres travelled as opposed to level of service in transportation assessments or emissions impact assessments.</li> <li>A key barrier to cycling is safety. In Europe and North America, a greater legal duty of care is placed on vehicle drivers in relation to any collisions with pedestrians and cyclists. Improving the legal protection in New Zealand for our most vulnerable travellers (i.e. walkers and cyclists are not protected by the steel structure of a vehicle) would help to create safer streets for all road users and enable low emission mobility.</li> <li>Fines for parking in bus lanes need to be amended to better reflect the disruption caused to travellers. Currently driving in a bus lane, yet the disruption to the bus service is far greater for the parking infringement.</li> </ul> |
|---|
| <ul> <li>We also propose these additional actions and targets:</li> <li>We recommend the Government requires all new residential housing to have electric vehicle charger infrastructure installed as soon as is practicable and to consider providing financial support towards the installation of electric vehicle chargers at residential homes and at residential developments, also as soon as is practicable.</li> <li>Incentives for battery electric car share and bike share schemes within developments.</li> <li>We ask the Government to implement a national number plate recognition system that can be used by councils and organisations, to identify pure electric, zero exhaust emission, vehicles, in order for these vehicles to be easily distinguished from petrol, diesel, hybrid and plug-in hybrid vehicles. This recognition system is required for the potential establishment of forthese provides and for the potential establishment of forthese provides.</li> </ul>  |

|  | <ul> <li>for pure electric, zero exhaust emission, vehicles and<br/>for the potential use of pricing mechanisms.</li> <li>We recommend establishing a voluntary vehicle<br/>scrappage scheme to encourage the recycling of old,<br/>unsafe and polluting vehicles manufactured prior to<br/>a defined date. Ideally this scrappage scheme would<br/>be linked to an incentive for zero exhaust emission<br/>mobility options (e.g. electric bikes, scooters or<br/>vehicles) as has proved successful in Europe.</li> <li>We also support a target date to be set for all new<br/>small passenger, coastal fishing and recreational<br/>vessels to be zero exhaust emissions.</li> <li>The Council recommends a clean discount (feebate)<br/>scheme for imported new and used off-road vehicles<br/>and construction equipment, focusing on providing a<br/>rebate discount for pure electric, zero exhaust<br/>emission, off-road vehicles and construction<br/>equipment and a fee (i.e. no rebate) for imported new<br/>and used petrol, diesel, hybrid and plug-in hybrid off-<br/>road vehicles and construction equipment. We would<br/>support these coming into place as soon as practical.</li> <li>We recommend that as soon as the allocation of<br/>rebates and fees in the clean car discount scheme is<br/>reviewed, the focus should move to a rebate discount<br/>for imported new and used pure electric, zero<br/>exhaust emission, vehicles and a fee (i.e. no rebate)<br/>should be used for imported new and used petrol,<br/>diesel, hybrid and plug-in hybrid vehicles.</li> <li>Options for encouraging working from home,<br/>distance learning and the use of technology to avoid<br/>the need for travel (e.g. remote zoom meetings)<br/>should be explored to help reduce emissions in a<br/>cost-effective way.</li> </ul> |
|--|---|
| Energy and industry  |   |
| Energy strategy  |   |
| General comments   | Outcome based targets are preferred to technology<br>specific approaches. All technologies should be<br>considered and evaluated for those with provide the best<br>value from a sustainability, cost, and reliability<br>perspective.<br>The government needs to rapidly increase investment in<br>renewable energy as New Zealand is currently going<br>backwards - the percentage of renewable energy in our<br>network is recently declining. A significant part of our net<br>zero transition pathway is to electrify more of our<br>transport and industry – this is a key challenge for<br>government to address which underpins the transition to<br>a low – emission economy.  |
| 58. In your view, what are the key priorities, challenges and opportunities that an energy | The delivered cost of electricity to consumers is<br>important for both residential and commercial and<br>industrial consumers. Energy affordability in the   |

| strategy must address to enable a<br>successful and equitable transition<br>of the energy system?  | residential market ensures living costs and transition<br>costs are minimised. Low electricity costs lead to people<br>being able to heat their homes and remain healthier.<br>Commercial and industrial consumers need electricity to<br>be less expensive than fossil fuel alternatives, so that the<br>transition is economically viable (with or without govt<br>funding).<br>The energy network needs to be viewed as an<br>interconnected system. A reduction of one energy source<br>either through scarcity or high prices will increase the use<br>of another. For example, increasing the cost of electricity<br>may delay electrification projects and prolong the use of<br>coal and gas. Retaining some thermal generation |
|--|---|
|  | capacity for a few more years may allow direct users of<br>fossil fuels to transition and reduce emissions quicker<br>than if thermal generation is decommissioned early and<br>transition projects don't go ahead due to high electricity<br>prices.<br>We need to ensure that energy is affordable enough to<br>facilitate social development, secure and reliable, whilst<br>ensuring that the source of energy is becoming cleaner<br>over time.  |
| 59. What areas require clear<br>signalling to set a pathway for<br>transition?   | Any phasing out of fossil fuels and price paths for ETS.<br>A clear price path for ETS (e.g. 20 years) will enable<br>consumers to have confidence in cost projections to<br>enable transition projects to succeed.   |
| Setting targets for the energy system  |   |
| 60. What level of ambition would<br>you like to see Government adopt,<br>as we consider the Commission's<br>proposal for a renewable energy<br>target?<br>Phasing out fossil gas while maintaining                         | The target should be set based on both what is needed to<br>meet emissions targets as wells as what is practical and<br>feasible to implement today.<br>Large reductions in fossil fuels can be met with today's<br>technology. Large scale investment in hot water heat<br>pump technology, for example, in residential homes<br>would both reduce significantly residential electricity<br>consumption, which would also allow thermal<br>generation assets to be retired, and would reduce<br>electricity prices for everyone (due to tranche-based<br>electricity pricing in NZ).   |
| consumer wellbeing and security of supply  |   |
| 61. What are your views on the<br>outcomes, scope, measures to<br>manage distributional impacts,<br>timeframes and approach that<br>should be considered to develop a<br>plan for managing the phase out<br>of fossil gas? | Most residential uses of fossil gas can already be<br>economically electrified at today's prices. Most of the<br>South island does not use gas (including LPG) for water<br>heating and cooking and space heating (they use electric<br>stoves and electric hot water cylinders). However, careful<br>planning will be needed to manage peak loading and<br>electricity network requirements.   |

|   | For commercial and industrial consumers, the end uses<br>of gas can either be replaced with direct electrification,<br>heat pumps or biofuels with varying economics. Strong<br>ETS pricing signals combined with Government<br>Investment in Decarbonising Industry (GIDI) - similar co-<br>funding should enable commercial and industrial<br>consumers to make feasible cases for transition to low<br>carbon fuels.<br>While this might not completely eliminate all fossil gas<br>uses, it will take care of a significant proportion. Some<br>fossil gas may be beneficial in the electricity system for a<br>longer time frame, as it is used in fast-acting peaking<br>plants, which can enable broader uptake of wind and<br>solar generation (displacing coal and baseload gas which<br>are more carbon intensive). This might only comprise 5%<br>or less of electricity generated |
|---|---|
| Decarbonising the industry sector   |   |
| 62. How can work under way to<br>decarbonise the industrial sector<br>be brought together, and how<br>would this make it easier to meet<br>emissions budgets and ensure an<br>equitable transition?                                 | Effective planning and market signals are needed to<br>ensure an adequate supply of electricity and biofuels are<br>available at a price point which enables transition.<br>Continuation of GIDI co-funding for reduction of<br>industrial emissions is critical to assist large businesses<br>to decarbonise. Many businesses can, and are already<br>looking to transition to low carbon energy sources<br>without funding assistance due to increasing fossil fuel<br>prices (gas) and increasing ETS unit prices.   |
| 63. Are there any<br>issues, challenges and<br>opportunities for decarbonising<br>the industrial sector that the<br>Government should consider, that<br>are not covered by existing work or<br>the Commission's<br>recommendations? | Expansion of the scope of GIDI and other programmes to<br>consider any projects which reduce gross CO2 emissions<br>on a competitive \$/tCO2 basis could help accelerate the<br>transition.   |
| Addressing current data gaps on New   |   |
| Zealand's energy use and associated   |   |
| emissions through an Energy and   |   |
| Emissions Reporting scheme  |   |
| 64. In your view, should the<br>definition of a large energy user for<br>the purposes of the proposed<br>Energy and Emissions Reporting<br>scheme include commercial and<br>transport companies that meet a<br>specified threshold? | Yes   |
| 65. We have identified a proposed<br>threshold of 1 kt CO <sub>2</sub> e for large<br>stationary energy users including<br>commercial entities. In your view,<br>is this proposed threshold   | This threshold will likely provide the data resolution<br>needed to improve the emissions data currently held by<br>the govt.<br>However, it would not necessarily form a solid basis for<br>ongoing decarbonisation support of large emitting<br>businesses, as this would be better supported through   |

| reasonable and aligned with the<br>Government's intention to meet<br>emissions budgets and ensure an<br>equitable transition?  | contestable funding on a \$/tCO2e abated metric. This will<br>enable all low hanging fruit (from a gross emissions<br>reductions perspective) to be addressed first.   |
|--|--|
| 66. In your view, what is an<br>appropriate threshold for other<br>large energy users such as<br>transport companies?  |  |
| 67. Are there other issues,<br>challenges or opportunities arising<br>from including commercial and<br>transport companies in the<br>definition of large energy users for<br>the purposes of the proposed<br>Energy and Emissions Reporting<br>scheme that the Government<br>should consider? Supporting<br>evidence on fleet size and<br>characteristics is welcomed.<br>Supporting development and use of<br>low-emissions fuels |  |
| 68. What level of support could or<br>should Government provide for<br>development of low-emissions<br>fuels, including bioenergy and<br>hydrogen resources, to support<br>decarbonisation of industrial heat,<br>electricity and transport?   | Govt should back development of low-emissions fuels<br>based on outcomes – and competitive targets for those<br>technologies that are supported. For example, specific<br>price points for fuels (to enable mass uptake) should be<br>considered.<br>Rigorous studies on the likely costs of alternative fuels<br>should be carried out as any money spent on fuels which<br>will not have meaningful uptake will take funding away<br>from projects that will reduce carbon.  |
| 69. Are there any other views you wish to share in relation to energy?   |  |
| Building and construction  |  |
| General comments   | Retrofitting programmes for residential and commercial<br>buildings will be vital since most of the buildings needing<br>to reduce emissions already exist. The Plan should place<br>greater emphasis on retrofitting as this can deliver a wide<br>range of co-benefits and enable a just transition / equity<br>approach. For example, the Warmer Kiwi Homes<br>programme should continue and be expanded to a wider<br>range of solutions able to make homes more energy<br>efficient. A warm, dry home that is cheaper to run greatly<br>supports low and fixed income households. |
| 70. The Commission<br>recommended the Government<br>improve the energy efficiency of<br>buildings by introducing   | Introducing mandatory participation in energy<br>performance programmes for existing commercial and<br>public buildings is a great opportunity for the<br>Government to show leadership by adopting the  |

| mandatory participation in energy<br>performance programmes for<br>existing commercial and public<br>buildings. What are your views on<br>this?  | frameworks (Embodied and Operational) ahead of the<br>private sector.<br>This is not a new proposal, as it was briefly mentioned in<br>both Frameworks from the Building for climate change<br>programs, Chapter 6, 'Approach'.<br>This would be a good approach. NABERSNZ should be<br>mandatory for all Govt buildings immediately followed<br>by commercial buildings over an acceptable time period.   |
|--|--|
| 71. What could the Government do<br>to help the building and<br>construction sector reduce<br>emissions from other sectors, such<br>as energy, industry, transport and<br>waste?   | The most crucial step would be to increase standards<br>within the New Zealand Building Code – to improve<br>energy performance and incorporate embodied carbon<br>and lifetime considerations. Industry tools and training<br>would then be needed to equip the building sector with<br>the ability to meet these needed higher standards.<br>Off-site manufacturing presents significant opportunities<br>to improve the performance of buildings and to reduce<br>waste, energy and transport associated with<br>construction. Rules and regulations need to enable high<br>performance prefabrication. |
| 72. The Building for Climate<br>Change programme proposes<br>capping the total emissions from<br>buildings. The caps are anticipated<br>to reduce demand for fossil fuels<br>over time, while allowing flexibility<br>and time for the possibility of low-<br>emissions alternatives.<br>Subsequently, the Commission<br>recommended the Government set<br>a date to end the expansion of<br>fossil gas pipeline infrastructure<br>(recommendation 20.8a). What are<br>your views on setting a date to end<br>new fossil gas connections in all<br>buildings (for example, by 2025)<br>and for eliminating fossil gas in all<br>buildings (for example, by 2050)?<br>How could Government best<br>support people, communities and<br>businesses to reduce demand for<br>fossil fuels in buildings? | <ul> <li>We support ending new fossil gas connections by 2025.</li> <li>Eliminating fossil gas in all buildings could be achieved sooner than 2050, (e.g. 2030) to align with the date when government is proposing to achieve a 100% renewable electricity supply.</li> <li>The date to end expansion of fossil gas pipelines should be brought forward as electric heating/cooling/cooking solutions in general, have operational cost parity with fossil gas solutions.</li> <li>Bio-gas made from sustainable sources could be a useful transition from liquid petroleum gas.</li> </ul>               |
| 73. The Government is developing<br>options for reducing fossil fuel use<br>in industry, as outlined in<br>the Energy and industry section.<br>What are your views on the best<br>way to address the use of fossil<br>fuels (for example, coal, fossil gas<br>and LPG) in boilers used for space   | The use of Fossil fuels in building should be strongly<br>discouraged (e.g. taxed until eventually banned).<br>To replace fossil gases, three major methods have<br>emerged overseas, as practical solutions to the<br>continued reliance on fossil fuels:<br>- bio-methane, a renewable gas produced by the<br>fermentation of organic matter mostly derived from<br>farms; (same appliances can be used, with an adaptor to<br>burn the gas properly);   |

| and water heating in commercial                       | - pyro-gasification, a technology that converts wood into   |
|---|---|
| buildings?  | gas; and  |
|   | - methanation, which uses electricity to produce  |
|   | hydrogen and then methane.  |
|   | Each of these methods, or resources, reduce atmospheric<br>emissions, generating electric power for engines and<br>turbines, and thus they offer more ecologically sound<br>possibilities to the use of fossil fuels. |
|   | - Replace coal boilers by pellet burner (co-generation:   |
|   | renewables.   |
|   | In general most fossil fuel based heating systems in  |
|   | buildings have higher operational costs than low carbon   |
|   | alternatives. No new buildings should use fossil fuels for  |
|   | heating. Possibly there needs to be a GIDI type model to  |
|   | into existing buildings   |
| 74. Do you believe that the Government's policies and | Everyone will be impacted by these changes, the poor<br>and vulnerable even more so. Protecting them in<br>particular will need to be a priority  |
| proposed actions to reduce                            | For residential properties, landlords have no incentive to  |
| building-related emissions will                       | install systems with low operational costs. This  |
| people or groups? If so, what                         | disadvantages tenants who are unable to pay for and   |
| actions or policies could help                        | install lower operational cost systems. Additionally, if a  |
| reduce any adverse impacts?                           | landlord was required to upgrade the heating system,  |
|   | around how to address this should be considered as part   |
|   | of the plan   |
| 75 How could the Covernment                           | Include a diversity of representation in related  |
| 75. How could the Government                          | programme steering groups and working groups – give   |
| of Māori and iwi are effectively                      | Maori a seat at the table and a voice in decision making.   |
| recognised, understood and                            |   |
| considered within the Building for                    |   |
| Climate Change programme?                             |   |
| 76. Do you support the proposed                       | The government's priority should be to raise minimum  |
| behaviour change activity focusing                    | standards for buildings and to support industry with  |
| on two key groups: consumers and                      | tools and training to achieve these new standards.  |
| industry (including building                          | The next priority should be to develop tools and  |
| product producers and building                        | approaches that enable informed decisions to be made  |
| the Government take into                              | when designing, building, buying or renting properties.   |
| account when seeking to raise                         | Currently people are making decisions with limited  |
| awareness of low-emissions                            | information. Tools such as Energy Performance   |
| buildings in these groups?                            | Certificates, Homestar, Greenstar, NABERS, ISCA and LCA   |
|   | building lifecycle.   |
|   |   |
|   | Raising demand for high performance buildings will be   |
|   | important (i.e. educating customers). However, the  |

| 77. Are there any key areas in the<br>building and construction sector<br>where you think that a contestable<br>fund could help drive low-<br>emissions innovation and<br>encourage, or amplify, emissions<br>reduction opportunities? Examples<br>could include building design,<br>product innovation, building<br>methodologies or other? | <ul> <li>building industry are effectively advisors to their</li> <li>customers. Giving industry professionals the skills and</li> <li>capability to deliver sound advice and higher performing</li> <li>buildings will be vital. One example of this would be to</li> <li>have approved design solutions that are energy efficient,</li> <li>low carbon and easy to consent.</li> <li>The industry urgently needs free online tools (promised</li> <li>by MBIE in the Program for climate change framework</li> <li>operational page 8.)</li> <li>free training</li> <li>Free advice.</li> <li>Free EPC (Energy Performance Certificate)</li> <li>Contestable funding for specific technologies – e.g. hot</li> <li>water heat pumps. To enable mass uptake in existing</li> <li>buildings.</li> </ul> |
|--|---|
| 78. The Ministry of Business,<br>Innovation and<br>Employment (MBIE) is considering<br>a range of initiatives and incentives<br>to reduce construction waste and<br>increase reuse, repurposing and<br>recycling of materials. Are there<br>any options not specified in this<br>document that you believe should<br>be considered?          | <ul> <li>Emphasize the need to use lean design methods and quantity surveyors to minimise wastage from construction.</li> <li>Tools like the BRANZ managed Resource Efficiency in Building Related Industries can help with the systems and processes needed to minimise waste from demolition and construction.</li> <li>Tools to more accurately measure the materials needed.</li> <li>Encourage companies to take back (&amp; refund) material not used on site.</li> <li>Producer responsibility - make building material suppliers deal with theirs product waste, after use.</li> <li>No GST or low % GST on recycled materials.</li> </ul>  |
| 79. What should<br>the Government take into<br>account in exploring how to<br>encourage low-emissions buildings<br>and retrofits (including reducing<br>embodied emissions), such as<br>through financial and other<br>incentives?   |   |
| 80. What should<br>the Government take into<br>account in seeking to coordinate<br>and support workforce<br>transformation, to ensure the<br>sector has the right workforce at<br>the right time?  |   |
| 81. Our future vision<br>for Aotearoa includes a place<br>where all New Zealanders have a<br>warm, dry, safe and durable home  | Encourage innovation in the building sector. Off-site<br>manufacturing when widely adopted can deliver<br>significant benefits, improve energy performance, reduce  |

| to live in. How can we ensure that<br>all New Zealanders benefit from<br>improved thermal performance<br>standards for our buildings?                                      | waste, minimise transport to a building site and cut costs and carbon.   |
|--|--|
| 82. Are there any other views you<br>wish to share on the role of the<br>building and construction sector in<br>the first emissions reduction plan?                        | The government should do more to encourage the use of<br>low emission building materials, such as wood. This<br>could also support the local economy, by utilising the<br>increase in pine plantations.  |
| Agriculture  |  |
| General comments   | Canterbury is a centre of excellence for innovation in the<br>Food and Fibre sector (see <u>Food, Fibre and Agritech</u><br><u>Supernode</u> ). New Zealand stands to gain significantly by<br>creating local and globally needed solutions. This will be<br>a vital part of our bio and knowledge-based economies.<br>Government investment in this area can unlock a huge<br>potential – this opportunity needs to be properly scoped<br>and priced to enable further investment and support in<br>this area |
| 83. How could the Government<br>better support and target farm<br>advisory and extension services to<br>support farmers and growers to<br>reduce their emissions?          | Advisory services are a vital way to support farmers<br>adopt good practice, but so too are field days and<br>learning events hosted by leading farmers, such as those<br>provided by <u>Quorum Sense – the NZ regenerative farming</u><br><u>network.</u> Working through farmer networks supports<br>peer to peer learning of best practice.   |
| a. How could the<br>Government support the<br>specific needs of Māori-<br>collective land owners?  |  |
| 84. What could the Government do<br>to encourage uptake of on-farm<br>mitigation practices, ahead of<br>implementing a pricing<br>mechanism for agricultural<br>emissions? | Signalling that unavoidable pricing mechanisms are<br>coming soon will incentivise action before pricing kicks<br>in. Delaying the introduction of pricing, or signalling<br>weak pricing will further delay action. Re-establishing the<br>Projects to Reduce Emissions Scheme, instead of<br>offsetting using only forestry, presents wider<br>opportunities for innovation across many sectors<br>including farming.  |
| 85. What research and<br>development on mitigations<br>should Government and the sector<br>be supporting?  | The government should support all research and<br>development able to reduce emissions from animals and<br>other on-farm emissions. Support should also enable<br>local plant-based industries to develop as an alternative<br>to meat and milk production. New Zealand should be<br>world leaders in these areas, and our efforts can help<br>other agricultural producers reduce global emissions.   |
| 86. How could the Government<br>help industry and Māori<br>agribusinesses show their<br>environmental credentials for low-   |  |

| emissions food and fibre products to international customers?   |  |
|---|--|
| 87. How could the Government<br>help reduce barriers to changing<br>land use to lower emissions<br>farming systems and products?<br>What tools and information would<br>be most useful to support decision-<br>making on land use?              | It is vital that New Zealand products are credible and<br>trusted in the market place – standards on<br>environmental performance, monitoring and eco-<br>labelling are needed to ensure quality and protect our<br>made in NZ brand.  |
| 88. Are there any other views you<br>wish to share in relation to<br>agriculture?   | The government seriously needs to address agricultural<br>emissions.<br>One of the most effective ways to keep warming below<br>1.5C is to drastically reduce methane emissions in the<br>next decade. New Zealand has an opportunity to be<br>world leaders in developing technologies which help<br>reduce agricultural emissions, and create a more<br>sustainable agricultural sector.   |
| Waste   |  |
| 89. The Commission's<br>recommended emissions<br>reduction target for the waste<br>sector significantly increased in its<br>final advice. Do you support the<br>target to reduce waste biogenic<br>methane emissions by 40 per<br>cent by 2035? | Yes, although such a significant reduction in methane<br>emissions from waste, while desirable, is likely to have<br>significant cost implications for local authorities and<br>other operators of landfills.<br>We consider that in order to meet this goal, it will be<br>necessary to increase investment in this area including<br>broadening how the waste- levy can be used to fund<br>research, new infrastructure, capital works and<br>equipment.<br>Modern resource consented landfills should be required<br>to capture and beneficially use landfill gas.<br>Consequently, these provisions mostly relate to existing<br>and historic landfills. The governments Projects To<br>Reduce Emissions scheme was successful at supporting<br>landfill gas collection projects and could be reinstated to<br>help unlock the capital needed to establish these |
|   | systems.   |
| 90. Do you support more funding<br>for education and behaviour<br>change initiatives to help<br>households, communities and<br>businesses reduce their organic<br>waste (for example, food,<br>cardboard, timber)?                              | Yes, we support more funding for national education and<br>behaviour change initiatives, provided that this does not<br>impact on the funding of successful local initiatives<br>already underway.   |
| 91. What other policies would<br>support<br>households, communities and<br>businesses to manage the impacts<br>of higher waste disposal costs?  | Bans on certain products and more effective and<br>regulated product stewardship schemes, options<br>identified in "Taking responsibility for our waste",<br>Ministry for the Environment October 2021.  |

| 92. Would you support a proposal<br>to ban the disposal of food, green<br>and paper waste at landfills for all<br>households and businesses by 1<br>January 2030, if there were<br>alternative ways to recycle this<br>waste instead? | Yes we would support this proposed ban, provided that<br>there are alternative ways to recycle this waste and there<br>are appropriate measures and resources to monitor and<br>enforce compliance.  |
|---|--|
| 93. Would you support a proposal<br>to ban all organic materials going<br>to landfills that are unsuitable for<br>capturing methane gas?  | Yes, we support the proposal.  |
| 94. Do you support a potential<br>requirement to install landfill gas<br>(LFG) capture systems at landfill<br>sites that are suitable?  | Yes, we support this requirement for currently operating<br>and new facilities. We also agree that such a requirement<br>should not necessarily apply to closed landfills because<br>of the high cost, relative to the limited benefits of<br>capturing emissions through installing LFG systems on<br>closed landfills. In addition alternative approaches and<br>guidelines should be developed where mitigation of<br>emissions outperforms LFG capture for energy.   |
| 95. Would you support a more<br>standardised approach to<br>collection systems for households<br>and businesses, which prioritises<br>separating recyclables such as<br>fibre (paper and cardboard) and<br>food and garden waste?     | Christchurch City Council is one of only 5 local authorities<br>which currently separate both recyclables and food and<br>garden waste (for composting). However, we do not<br>support a standardised collection method for materials<br>because any approach should take into account local<br>circumstances and consider best-fit collection systems.<br>Noting that decisions regarding source separation or<br>commingled divertible materials are best made locally<br>and will differ due to scale, processing capacity and<br>transportation logistics.<br>Any system requirements need to recognise that what is<br>appropriate for a large metropolitan area may not be<br>practicable, or most efficient across the country.<br>We do support greater consistency about the way<br>materials are presented, such as lids off or the types of<br>plastics collected – to make it simpler for residents and<br>to enable synergies for processing the materials collected<br>(e.g. regional recycling facilities). |
| 96. Do you think transfer stations<br>should be required to separate and<br>recycle materials, rather than<br>sending them to landfill?   | Yes, we agree.   |
| 97. Do you think that the proposals outlined in this document should also extend to farm dumps?   | Yes, we agree.   |
| 98. Do you have any alternative ideas on how we can manage  | We would strongly support development of a National<br>Environmental Standard for Disposal to Land, to address<br>unlicensed disposal activities such as stockpiling and<br>farm dumps. This approach would enable accurate data   |

| emissions from farm dumps, and<br>waste production on farms?   | to collected and include standards for waste related emissions  |
|--|---|
| 99. What other options could<br>significantly reduce landfill waste<br>emissions across Aotearoa?  | Material bans and LFG capture and treatment systems<br>could contribute to reduced emissions. LFG systems<br>which generate energy need to be integrated with<br>adequate infrastructure e.g. transmission lines so that<br>there is suitable capacity to utilise the energy. For landfill<br>and unlicensed disposal sites, where LFG capture is not<br>feasible to install, alternative approaches such as<br>sequestration via landfill capping approaches to also be<br>considered with best practice guidance developed. |
| F-gases  |   |
| General comments   |   |
| 100. Do you think it would be<br>possible to phase down the bulk<br>import<br>of hydrofluorocarbons (HFCs) more<br>quickly than under the existing<br>Kigali Amendment timetable, or<br>not? |   |
| 101. One proposal is to extend the<br>import phase down to finished<br>products containing high-global<br>warming potential HFCs. What<br>impact would this have on you or<br>your business? |   |
| 102. What are your views on<br>restricting the import or sale of<br>finished products that contain<br>high-global warming potential<br>HFCs, where alternatives are<br>available?            | This should be introduced immediately whenever there are other options available.   |
| 103. What are your views on utilising<br>lower global warming potential<br>refrigerants in servicing existing<br>equipment?  | This should be strongly encouraged, and be mandatory<br>as soon as lower global warming products are available<br>at a similar price.   |
| 104. Do you have any thoughts on<br>alternatives to HFC refrigerants<br>Aotearoa should utilise<br>(e.g., hydrofluoroolefins or natural<br>refrigerants)?                                    |   |
| 105. Can you suggest ways to<br>reduce refrigerant emissions, in<br>combination with other aspects of<br>heating and cooling design, such<br>as energy efficiency and building<br>design?    | Addressing end of life product use is a big gap in this<br>sector – need standards to encourage / mandate the safe<br>'de-gassing' of heat pumps, fridges etc. at the end of the<br>product's life. Otherwise powerful greenhouse gases are<br>released onto the atmosphere when appliances are<br>dumped and crushed.  |
| Forestry   |   |

| General comments  |   |
|---|---|
| 106. Do you think we should look to<br>forestry to provide a buffer in case<br>other sectors of the economy<br>under-deliver reductions, or to<br>increase the ambition of our future<br>international commitments?     | Yes, forestry could be used to both offset residual<br>emissions in hard to abate sectors, and increase our<br>international commitments.<br>However, gross emissions reductions across all sectors<br>should be the first priority – carbon forestry should not<br>be seen as a way to avoid or delay moves to decarbonise<br>the economy.   |
| 107. What do you think<br>the Government could do to<br>support new employment and<br>enable employment transitions in<br>rural communities affected by<br>land-use change into forestry?                               | Provide training programmes for people to be employed<br>in the forestry industry, and associated industries which<br>add on-shore value to forestry products, or in the<br>alternative low-emission jobs of the future.  |
| 108. What's needed to make it more<br>economically viable to establish<br>and maintain native forest through<br>planting or regeneration on private<br>land?  | Greater financial incentives for private landowners - a<br>price differential between exotic plantations and<br>permanent indigenous forest is needed to better reflect<br>the multiple benefits provided by native forests such as,<br>biodiversity, surface and ground water quality, land<br>stability and lower fire risk. Biodiversity loss and water<br>quality are critical issues for New Zealand. Valuing these<br>co-benefits will be needed if we are to encourage private<br>landowners to plant, regenerate fence and predator<br>control areas of native forest.<br>Policy settings need to favour the regeneration of<br>indigenous forests and the culture of government<br>agencies needs to change to enable this.<br>Making it easier, or more attractive to enter regenerating<br>native forest into the ETS could provide a return for<br>private land-owners to fence off marginal land and return<br>it to native forest.<br>Land owners are having difficulty getting naturally<br>regenerating forests into carbon forestry schemes – the<br>frameworks are not enabling. An example of this is<br>difficulty in establishing a baseline when the marginal<br>land is covered in gorse or broom for example (gorse is<br>often cleared for pine plantation, but gorse can be a<br>nursery crop for regeneration native forests). |
| 109. What kinds of forests and<br>forestry systems, for example long-<br>rotation alternative exotic species,<br>continuous canopy harvest, exotic<br>to native transition, should the<br>Government encourage and why? | Permanent indigenous forests provide multiple benefits<br>and can be delivered at scale and are more aligned to our<br>climate and ecological emergency.  |
| a. Do you think limits are<br>needed, for example, on<br>different permanent exotic<br>forest systems, and their  | There should be limits on the scale of exotic plantations<br>in some areas where permanent native forests would be<br>more desirable.   |

| location or management?<br>Why or why not?  |   |
|---|---|
| b. What policies are needed<br>to seize the opportunities<br>associated with forestry<br>while managing any<br>negative impacts?  | Government should enable a carbon price differential<br>between pine and native forestry, to incentivise more<br>permanent native forests. This could recognise the many<br>co-benefits provided by indigenous forests. This could be<br>supported by a biodiversity credit or premium (e.g. a<br>carbon credit cap could be placed on exotic forestry and<br>a price premium be applied to indigenous forest<br>restoration).<br>Mandated buffers (for example a requirement for<br>permanent planting along waterways and coastlines) are<br>needed around exotic forestry to help manage the<br>impacts of logging on local waterways (e.g. tree slash<br>flowing in to rivers and the sea). |
| 110. If we used more wood and<br>wood residues from our forests to<br>replace high emitting products and<br>energy sources, would you support<br>more afforestation? Why or why<br>not?   | Yes, if we were using more wood, then we would need a<br>local supply – otherwise we would suffer from<br>deforestation.  |
| 111. What role do you think should be played by   |   |
| a. central and local<br>governments in<br>influencing the location<br>and scale of afforestation<br>through policies such as<br>the resource management<br>system, ETS and<br>investment? | Central and local government should have a critical role<br>in order to facilitate the best overall outcomes for New<br>Zealand from forestry.<br>Unfettered planting may have negative consequences for<br>some communities which could be avoided through<br>better planning and the right types of incentives, for the<br>private sector to plant the most suitable trees, at suitable<br>scale, in the right locations.   |
| b. the private sector in<br>influencing the location<br>and scale of afforestation?   |   |
| 112. Pests are a risk to carbon<br>sequestration and storage in<br>new, regenerating and existing<br>forest. How could the Government<br>support pest<br>control/management?              | The role of plant pest control (e.g. possum control),<br>wetland and soil carbon storage is poorly considered and<br>yet can provide significant benefits in NZ.  |
| 113. From an iwi/Māori perspective,<br>which issues and potential policies<br>are a priority and why, and is<br>anything critical missing?  |   |
| 114. Are there any other views you<br>wish to share in relation to<br>forestry? | Policy settings greatly favour exotic forestry (pine). This<br>is exacerbated by high carbon prices. Pine forestry has<br>obvious limitations – not long-term or permanent,<br>monoculture crop diminishes biodiversity, the harmful<br>impacts of logging (land stability and tree waste being<br>washed away), and land can only sustain so many<br>rotations of pine before it loses its ability to grow the<br>crop (long crop rotations are needed). |
|---|---|
|---|---|



Our **Food Rescue** organisation has been running since 2017 in which time we have rescued and recovered over **Generation** of edible, perfectly good food that would otherwise have ended up in the council waste stream. Our service supports and feeds upwards of 1200 families every single week in the Hawkes Bay area. Food waste is something we feel incredibly passionate about and instead of being fuelled entirely by grassroots initiatives we would love to see some **solid** support and set timeframes/targets coming from the govt sector.

| Set food waste and rescue targets      |   |  |
|--|---|--|
| Food<br>waste and<br>rescue<br>targets | <ul> <li>To support food rescue playing a greater role in achieving New Zealand waste and climate goals, it is recommended:         <ul> <li>Set a food waste target in line with the Sustainable Development Goal 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.</li> <li>Consistent with the waste hierarchy, set a target by 2030 that 80% of surplus food is redistributed to people and by 2050: 100% of surplus food is redistributed to people.</li> </ul> </li> </ul> |  |
| Actively support food rescue           |   |  |
| National<br>strategy                   | <ul> <li>Develop a national level food waste reduction strategy and implementation plan. Unlike many countries New Zealand does not have a specific food waste strategy and responsibility is split across various central government ministries and departments and local territorial authorities.</li> <li>Continue to increase waste levies to discourage food going to landfill.</li> <li>Prohibit food going to landfill by 2030.</li> </ul>   |  |

| Food<br>rescue<br>funding | <ul> <li>Make available operational funding for food rescue organisations.<br/>Funding, especially for running costs is a major barrier for the financial<br/>sustainability and growth capacity of food rescue organisations.<br/>Currently some limited funding has been provided through<br/>Ministry of Social<br/>Development's Covid-19 response however this was only for two<br/>years and the Waste Minimization Fund has been oversubscribed<br/>and does not allow funding for the ongoing financial support of<br/>existing activities, nor is it for the running costs of the<br/>existing activities of organisations. Increasing funding and<br/>opening it up for operational costs would increase capacity to<br/>rescue food.</li> <li>Open up Emissions Trading Scheme revenue to be recycled for<br/>food rescue organisations.</li> <li>The Government should investigate tax credits and incentives for<br/>food rescue that are available in many countries and review current<br/>taxation rules to ensure food donors are not discouraged.</li> <li>Establish a fund to encourage greater coverage of food rescue<br/>capacity in areas without.</li> </ul> |
|---------------------------|--|
|---------------------------|--|

|                         | <ul> <li>Continue to fund the Aotearoa Food Rescue Alliance<br/>to increase capacity building, best<br/>practise, collaboration and advocacy for food<br/>rescue organisations.</li> </ul>  |
|-------------------------|---|
| Data and<br>information | <ul> <li>Data         <ul> <li>Provide greater funding for data gathering, technology and analysis for food rescue.</li> <li>Require large food producers and retailers to disclose how their surplus food is disposed of and how much is distributed to people via food rescue.</li> </ul> </li> <li>Information         <ul> <li>Support greater education and behaviour change campaigns to reduce food waste.</li> <li>Promote the 'Good Samaritan' clause in the New Zealand Food Act 2014, which absolves criminal liability if the food is safe at the time of donation, to encourage greater donation.</li> </ul> </li> </ul> |

### 1. Food waste and rescue is a priority

Organic waste, in particular food waste, should be a priority. Food rescue should be acknowledged as being near the top of the food waste hierarchy and consistent with principle 2 - keeping materials at their highest value. As a human necessity, there are practical limits on how much food production can be reduced so re-using surplus food for human consumption is the best outcome.

2. Extend availability of food rescue

I support the proposal to 'extend the availability of food rescue programmes' and add encourage the development of:

• A national food waste strategy with implementation plan and targets • Support food rescue by allowing operational funding under the waste Minimisation Fund, fund to expand geographically food rescue to underserved regions, continue increasing the waste levy, investigate tax incentives and provide support for better data, analysis and food waste promotional campaigns.

3. Food waste and the circular economy

Only a fraction of the good, nutritious food unsold in retail is currently able to be rescued Food rescue takes good, nutritious food out of the potential waste stream. Food waste is a key part of building a circular food system, whereby the product's original and highest value use is preserved and following the waste hierarchy is either used for animal feed, turned into compost or the methane is captured before landfilling.

Nga Mihi

Christina McBeth

CEO/Founder Nourished for Nil

# Feedback on the Emissions Reduction Plan, 24 November, 2021.

Submitted by

# Retired company director and educator.

Thank you for the opportunity to provide feedback on your emissions reduction plan. Much of what you propose to do is commendable, and I apologise for not commenting on these. Because of time constraints, my feedback addresses the snapshot document only. I include eight main points in my summary at the end of this feedback.

# Overview

My overriding impression is that the plan includes many laudable initiatives, but that they are not treated with the urgency needed for the mass extinction we are experiencing. We know from UN IPPC science reports and the latest COP26, that we need to reduce emissions twice as fast as we thought. New Zealand has shown leadership over the proliferation nuclear power in the past, and more recently with the covid pandemic, but we have not shown the same leadership or courage over driving back ecological overshoot and it's most dramatic and visible symptom, climate breakdown.

New Zealand, like most western, industrially developed countries, acts in accordance with a neo-liberal economic and political philosophy, where infinite growth is seen as possible on a finite planet. I am very pleased to see the mention of a circular economy, and yet nothing the government is putting in place shows how we will shift away from the current economic model. We have to be braver and more specific.

The belief that we can work at the slow pace we have been working, and continue to live in a business as usual world with the same over-production/consumption, wasteful and inequitable practices, has been shown to be deeply flawed. To save the plant and animal world, to save ourselves, we need to abandon the way we have been living. We need to enact laws and a justice system that prevents the accumulation of wealth through over-production of harmful and unnecessary "goods" and "services." We need to abolish a philosophy that rewards the naked contempt, exploitation and of nature.

When countries talk about phasing down rather than phasing out, this is disastrous for life on earth. When New Zealand allows farmers and coal companies, for instance, to shape their own response to the climate emergency, we cannot meet the deadlines that the science has set to keep global heating below 1.5. Instead the climate emergency needs a "wartime" response appropriate to averting impending mass extinction as a result of even yet unprecedented events such as floods, fires, storms, sudden rising tides, further ocean acidification, desertification, tipping-point greenhouse gas surges, food and water shortages, **builded** for survival.

# Discussion

Throughout the document, the language reflects a strong appeasement approach to addressing climate breakdown. New Zealand has shown it can keep people safe from a deadly virus. We need to take the same severe measures to keep people safe from total climate and ecological breakdown. Below I have made eight points based on a few statements that are particularly problematic. I have <u>underlined</u> words and phrases of appeasement, and **bolded** a more appropriate word/phrase and response.

1. The Government has agreed <u>in principle</u> to amend the Commission's recommended budgets to <u>recognise changes in projected forestry emissions</u> that were not available when the Commission prepared its advice. The proposed amendment would <u>increase emissions allowed</u> in the first emissions budget period by 0.7% (2 Mt CO2e). But the combined effect over the three budget periods will reduce emissions by a total of 14 Mt CO2e – 1.6% lower than the Commission's recommended total for the three budgets.

The three budget periods of the emissions reduction plan aim to be completed around 2037. Any deviation of the plan as a result of corporate industry pressure renders the plan ineffective in addressing climate breakdown. The statement above allows an increase of emissions in the short term in exchange for a promise of lower emissions by end end of the three-stage budget period. 2037 may already be too late. The target date of achieving nett zero emissions 2050 is, the science tells us, too late if we take into account the speed of acceleration and tipping points. So we must bring forward our interim measures. The first three emissions budget periods must aim for 70% reduction of emissions by 2030.

2. <u>Empower central and local government</u>, iwi/Māori, communities and business to..[continue to] engage in a talk fest.

Use emergency laws to require central and local government, working with iwi, to ACT NOW. Central and local government already have power through existing laws and new laws can be enacted where necessary. Covid has shown how this can be done. The time for seeking more information is over.

# 3. Amend and continuously improve the NZ ETS.

The appeasing term "<u>nett</u> zero" should be abolished, it's dishonest. We know the ETS allows destructive practices to continue. It allows for payment to be made away somewhere so that an organisation can continue to do damage to life on the planet, with no required assessment that that trade effectively resulted in the reduction carbon emissions. A glaring example is the planting of trees (no specification of maturity) to offset air travel or coal imports. Young trees are not sufficiently able to sequester enough carbon. Mature trees and mangroves have a greater ability, but we are still felling and clearing these valuable resources. **Scrap the ETS**, this is a tool of and excuse for corporate industry greenwashing, not a means to address the climate crisis. Yes, other countries have adopted a nett zero goal for 2050 or later, but we in New Zealand need to lead with honesty and courage.

# 4. <u>Make it easier for people to make low-emission choices.</u>

Ordinary citizens are not the problem, as you will know. Because of the extent of harmful products and practices under capitalism, people have very little opportunity to make low emission choices. So citizens' (often called consumers) choices need to be addressed through requirements of industry such as an immediate ceasation of planned obsolescence and a return to repairing rather than replacing goods. Further, ordinary citizens have no ability to exercise choice if the government for instance allows oil exploration permits and imports coal.

An international campaign to embed criminal liability for intentional damage to the environment by companies or governments (STOP ECOCIDE) is gaining momentum. More and more countries back the call for ecocide to be included as a crime in the ICC. Each country will need to implement their own internal response to this criminal activity. If we want to be a global leader, New Zealand will need to: **Require (rather than invite of encourage) industry to fast-track (not phase in) low emission practices in manufacturing and services**. We need to impose heavy fines for non-compliance.

5. The emissions reduction plan will reduce greenhouse gas emissions and increase forestry removals, while improving the wellbeing of our people and regional economies, fostering industry, innovation and investment, and <u>supporting nature-based solutions</u> that are good for both the climate and biodiversity.

Forestry is the business of felling forests and sending logs to market. This can happen at any stage in the life of the forest, so includes the felling of young trees. Thus carbon "removal" in the forestry is not a nature-based solution. Mature trees (that are not felled) are needed for carbon removal of the scale needed. We need, in addition, to stop subsidising this and all industries that participate in climate destruction.

# 6. <u>Reducing</u> our use of imported hydrofluorocarbons that are inserted in equipment.

We need enact laws with same same urgency we acted to eliminated covid, and vaccinated the population. Make the importation of hydrofluorocarbons illegal.

# 7. Working to make sure many public organisations are carbon neutral by 2025.

We need enact laws with same same urgency we acted to eliminated covid, and vaccinated the population. Require, through laws and monitoring, that all public organisations are carbon neutral by 2025.

8. <u>Assisting</u> farmers and food growers to measure, manage and reduce their emissions, while sustainably producing quality products.

We need enact laws with same same urgency we acted to eliminated covid, and vaccinated the population. Require, through laws and monitoring, that all industry, including farmers and food growers, reduce 70% of their emissions in line with the first three budgets, by 2030.

# **Summary:**

- 1. The first three emissions budget periods must aim for 70% reduction of emissions by 2030.
- 2. Use emergency laws to require central and local government, working with iwi, to ACT NOW.
- 3. Scrap the ETS.
- 4. Require (rather than invite of encourage) industry to fast-track (not phase in) low emission practices in manufacturing and services.
- 5. Stop subsidising all industries that participate in climate destruction,
- 6. Make the importation of hydrofluorocarbons illegal.
- 7. Require, through laws and monitoring, that all public organisations are carbon neutral by 2025.
- 8. Require, through laws and monitoring, that all industry, including farmers and food growers, reduce 70% their emissions in line with the first three budgets. By 2030.



### SUBMISSION ON CLIMATE ACTION PLAN

Submitter: Pacific Institute of Resource Management



The Pacific Institute of Resource Management (PIRM) welcomes the opportunity to comment on this Bill. PIRM is a long-established organisation dedicated to promoting the sustainable use of the earth's resources. It publishes the occasional journal "Pacific Ecologist". We have made frequent submissions to government on Climate Change issues over the last 20 years including submissions on New Zealand's Climate Change Target (3<sup>rd</sup> June 2015 and 31<sup>st</sup> July 2009), Emissions Trading (26<sup>th</sup> February 2009 and 28<sup>th</sup> May 2007) and Zero Carbon Bill (15<sup>th</sup> July 2019). These and other Submissions are available on our website (<u>www.pirm.org.nz</u>).

This submission attempts to be comprehensive by answering all of the questions. However there are several points which we wish to emphasise rather than risking them being lost in the mass of this submission. For simplicity these are listed as follows:

- 1) It is too late in the process of climate change to be able to afford further expenditure in emissions to achieve savings in the longer term.
- 2) We favour targeted regulation over pricing and similar financial instruments
- 3) We suggest a legislated limit on the availability of fossil fuels as a major tool to reduce emissions.
- 4) A programme for energy descent is a necessary part of climate change action
- 5) Fossil carbon emissions cannot be legitimately offset in accounting by forestry sequestration
- 6) We question the ability to achieve climate change goals within the current paradigm of economic growth and technocratic solutions.

The introduction by the Climate Change Minister, Hon. James Shaw, gives no sense of existential threat; neither of urgency or even difficulty. Rather, there is a resolutely positive framing of a future that will be 'low emission, climate resilient' with increased well-being. There is no recognition of the fact that, after thirty or more years of prevarication, the options for a leisurely and comfortable course have ended. It is now a climate emergency.

The reason for this consultation is unclear given that it follows upon prolonged and extensive consultation by the Climate Change Commission and, as manifested in the multitude of references within the Consultation Document, a massive amount of more specifically targeted consultation by several government ministries over recent years. Further consultation is promised! If consultation were an effective weapon against climate change, we would be out of the woods already.

The proposals are concentrated around 'policies and strategies'; there is no mention of action.

There is repeated mention that any proposals must be 'affordable'. This approach is inconsistent with the notion of a climate emergency and in stark contrast to the response to Covid-19 where there has been expenditure *as required* to address the crisis.

How can emissions reductions be ensured or their sum estimated when so much action is based upon choice? When critical matters are based on soft data such as the Afforestation and Deforestation Intentions Survey?

The task ahead is described as 'more significant' than the Climate Change Commission anticipated but there is no explanation of how this misjudgement occurred nor explication of the findings that have led to the reappraisal. Contrary to the widely recognized fact that early rather than delayed action is more effective in climate change mitigation, there appears to be an intent to extend the period over which mitigatory responses are made, without augmentation of the responses themselves; to 'lay the foundation for deeper cuts in the second (budget) period.' Returns on effort are rarely cumulative; more often reducing and increasingly difficult. This section amounts to a categorical statement of resolve to defer action and is totally unacceptable. It is surely an inappropriate response to the work of the Climate Change Commission and the context of existential threat to put conditionality around the emissions budgets ....."technically achievable, economically viable and socially acceptable".

The outcome of the Climate Action Plan cannot be uncertain but must fulfill the Purpose of the Zero Carbon Act. The admission of high uncertainty regarding "policy impact" confirms that these policies are unfit for purpose.

The model for action, redolent of late-20<sup>th</sup> century economic orthodoxy, appears to follow the mantra of "measure, manage and price". Yet there is acknowledgement that there is uncertainty: in measurements and baselines, incommensurability of data and also in a set of assumptions including "economic conditions", rainfall for hydroelectric generation, the fate of Tiwai Point aluminium smelter and the Marsden Point oil refinery, the speed and extent of uptake of technology, and the form of behavioural change. These variables are all able to confound the intent of policies. The uncertainty of outcome is reflected in estimates for emission reduction that can be realized in the first Carbon Budget period that range from 2.6 to 5.6MtCO<sub>2</sub>e.

For this reason, we advocate an action plan that is tightly targeted upon reduced consumption of fossil fuels with as little room for deviation as is practicable. Rather than attempting to incentivize the 'right' choice through mechanisms such as emissions pricing and congestion charging we advocate for the use of targeted regulation with assured compliance: a cap on the amount of fossil fuel admitted to the economy. An imposed constraint on fossil fuel availability will surely provide the "right environment and space for business to act".

On the contrary, pricing tools are inherently uncertain in their effects as so many uncontrollable factors influence the final price in both absolute and relative terms. They are also intrinsically regressive and have their strongest effects in parts of society that are least likely to incur emissions through discretionary activity. Targetting profligate consumption of goods and services by the wealthy would be more just but is very difficult to achieve with the usual means of emission pricing. These facts of uncertainty of climate change mitigation effects and inequitable social impacts lead us to reject pricing tools as a means.

It is difficult to disagree with a great many of the proposals for climate change action individually and these are commented upon as they arise in the set of questions. However, it is doubtful that they will be effective in total, despite their great number. This is because they remain within a paradigm of efficiency, productivity, progress.. that is the fundamental cause of the climate crisis. **They propose only business-as-usual with renewable energy.** 

1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not.

The plan should be guided by a set of principles. Those proposed are difficult to disagree with. It is important however that procedural principles do not interfere with the primary intent – to reduce emissions. A statement reinforcing the paramount importance of emission reduction would be of value.

2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

The underlying model for climate change mitigation appears to be that of enabling and empowering private sector enterprises and individuals to take effective action.

That matters can be addressed by 'policy and regulatory settings'. There is nothing needed but a few tweaks to the existing system. ...the managerial model of governance at its most effete.

The major barrier to decarbonisation is the ready availability of high energy intensity fossil fuels suited for use with the present infrastructure. The simplest way to remove this barrier is to progressively restrict the availability of these fuels in a fossil-energy descent programme.

3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

Further actions of limited scope and uncertain effectiveness are likely only to increase the complexity and difficulty of achieving emissions reduction. The list of actions committed to and proposed is already daunting. That there remains a moderate to large shortfall relative to the budget period target indicates the need for an action with significant economy-wide effect. This would be afforded by a sinking cap on the availability of fossil fuels.

4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

The primary driver of both climate change and biodiversity loss is globalised industrial capitalism and the increasing consumption of material resources and energy that it requires. New Zealand as an advanced Western nation and a proud exponent of free trade is deeply embedded in this system. Until we develop means of livelihood outside of this destructive system, any actions under an emissions reduction plan can only deliver marginal benefits for climate and biodiversity. The identification of the circular and bioeconomy as areas for development is very promising as these are intrinsically localised rather than globalised activities that these are a radical departure from the economic orthodoxy and largely incompatible with the global system as it exists. We strongly support development of a circular bioeconomy and progressive movement away from the destructive imperatives of the current system.

5. Are there any other views you wish to share in relation to the Transition Pathway?

Implicit in the pathway is an assumption that economic growth will continue. All of the standard features of such growth – increases in productivity, GDP, population, innovation, affluence – are taken as the ground on which the Pathway will be laid. It is a proposal for business-as-usual with low-carbon energy. While economic growth on the standard terms continues, it will inevitably increase consumption of natural resources, production of wastes and the size of our environmental footprint. Given the critical place of fossil energy in maintaining such growth it is doubtful that growth can be sustained in its absence. For the Pathway to be credible, it must acknowledge and allow for reduced overall use of energy and materials (See comments under...)

6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

Such win-win solutions are not prevalent. One measure which is primarily adaptive but also effective in mitigation is the identification of areas at risk from climate change effects such as flooding, wildfires, landslides and sea-level rise and prohibiting building within them. This reduces emissions from earth moving for construction and defensive purposes and from building materials and construction processes.

7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

The use of afforestation to (putatively) offset emissions is a very risky approach. Carbon sequestered in forests is subject to sudden catastrophic release as a consequence of fires, windthrow, insect attack or disease, all of which are increasingly likely events as climate changes. There is likely to be release from forest soils as well as standing vegetation in such events. There is also a significant risk that increasing average temperatures will shift forests from sequestration of carbon to net emission due to the differential temperature sensitivities of plant photosynthesis and respiration. Recent studies mark this shift as a possibility within the next few decades.

Because of this lability of carbon stored in vegetable biomass and soils it is a mistake to consider such sequestration as an offset to fossil carbon emissions. That such offsetting is part of standard practice and underpins the Emissions Trading Scheme greatly reduces the perceived need and financial incentive for reduction in gross carbon emissions. The net effect is an increase in the carbon burden upon the biosphere with exacerbation of climate change, ocean acidification and other detrimental effects.

While there is a limited case for using forestry sequestration as an accounting offset for biogenic methane (see below under....) and sequestration can be considered to atone for historical deforestation, the mechanism otherwise needs to be avoided.

Questions 8 – 12 Not applicable.

13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?

14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission, and any other objectives that you think should be included in an Equitable Transitions Strategy?

15. What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?

These are complex matters that can only be dealt with by a process of deliberation involving those directly affected and informed by compassion and fairness.

16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

18. What additional resources, tools and information are needed to support community transition planning? 19. How could the uptake of low-emissions business models and production methods be best encouraged?

If effective economy-wide emission reduction measures such as limitation of fossil fuel availability are introduced, transition by households and business will be strongly incentivised. Support for these sectors is part of the normal business of government. As it is uncertain exactly how the transition will play out it is impossible to plan in detail how to provide appropriate support. A commitment to provide support as needed is probably all that can be done in anticipation.

20. Is there anything else you wish to share in relation to making an equitable transition?

It is entirely possible that the effects of climate change and mitigation efforts may completely disrupt the present social order. We may need to make large changes to the way that basic requirements for living – food, shelter, clothing – are obtained. There is a significant body of work which suggests that these requirements would be best met by widespread engagement in small scale agriculture. (Small Farm Futures; Chris Smaje) If employment and supply chains experience major disruption, access to the means of subsistence may become a critical issue. We recommend the establishment of a programme of work in this area exploring pertinent matters such as access to suitable land, the nature of tenure and development of the skills needed by participants.

21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

The monitoring and reporting of the Climate Change Commission should be sufficient. It was established for the purpose of ensuring accountability. If we cannot rely on the government to operate with integrity in these matters, we are in deep trouble indeed.

22. How can new ways of working together, like mission-oriented innovation, help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climate-resilient economy?

This question involves two areas of contention: the paradigm of technic exemplified by mission-oriented innovation as conceived by the OECD and the set of ambitious goals. A comprehensive critical examination of these areas is not possible within the confines of this submission and a few indicative comments will have to suffice.

Taking the goals first. While a fair and inclusive society is unquestionable as a goal, the characteristics of the economy are more contentious. In particular, the choice of "climate-resilient" implies an economy that is able to resist the effects of climate change and maintain its present course rather than an economy that has adjusted its scale and direction to respect the constraints of the biophysical environment.

The new ways of working together aim to extend the application of technical means across society. The OECD document "The Design and Implementation of Mission-oriented Innovation Policies" proposes a further abstract conception redolent with jargon, aiming to maintain economic growth with all its consequences and with a view of humanity as "the ultimate *customer*" (italics added). It suggests that more intensive and sophisticated employment of the same approaches that have brought the world to its current pass can be its salvation. We contend that ways of working together that are proven by long experience, appropriately scaled to human social groups and that avoid alienation and maintain individual agency are to be preferred over a totalitarian technocratic approach.

23. Is there anything else you wish to share in relation to government accountability and coordination?

See response to Q 21.

24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa

There is a major misperception that high-emission activities can be sustained by adjustments in practice or by the introduction of new technology. This acts as a disincentive to redirect current capital investment. The misperception is supported by government in many cases, especially in the context of the pandemic where there is a strong desire for a return to 'normal'.

Tourism is a particularly pertinent example. From the climate change perspective, tourism is a major source of fossil carbon emissions as a consequence of discretionary spending by the affluent. This is particularly the case for overseas tourists in New Zealand where access is by air but domestic tourism also incurs emissions while our transport systems remain largely fossil fuel dependent. In a climate crisis, tourism is untenable. Yet the government urges local tourism now and implies that international tourism will resume as soon as possible. The tourism industry has expectations of future growth and is seeking support for training of the workers it intends to employ.

25. What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?

Not applicable.

26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

27. Is there anything else you wish to share in relation to funding and financing?

There is an apparent bias toward innovation in the application of finance. While innovation has its place, it is problematic when it results in destruction or functional obsolescence of existing infrastructure and equipment with their embodied emissions. There is a need to include embodied emissions in all emissions accounting. If they are not included we face the ridiculous prospect of having lost the utility of things for which we are still bearing the burden of emissions released when they were made.

28. Do you have sufficient information on future emissions price paths to inform your investment decisions? Not applicable

29. What emissions price are you factoring into your investment decisions? Not applicable

30. Do you agree the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

31. What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider to ensure we do not unnecessarily restrict forest planting?

32. Are there any other views you wish to share in relation to emissions pricing?

Economic approaches aim for efficiency and to account for externalities, but both of these concerns are strictly confined within the field of human interest and exclude non-human nature from consideration. Economics assumes that the assets of nature can be bought and traded and that money can both protect and restore them. It requires money value to be assigned to abstract entities such as ecosystem services and to conjectural effects such as altered conditions of life for future generations. Linking disparate problems through a common money value, it requires them to be solved simultaneously. It drafts nature into a volatile and unpredictable financial system wherein powerful agents are compelled to act in self interest. All of these make economic measures on climate change contentious in application and unpredictable in effect.

Complexity and uncertainty inherent in the economic approach have fogged our vision and paralysed effective action.

There are serious and fundamental flaws in any trading scheme dealing in emissions permits. These arise from the origin and subsequent history of the concept and from the technical difficulties of operation. Such trading offends against normative principles that follow from an attitude of Respect for Nature.

Tradable emission permits as a concept was developed by US economists (e.g.TD Crocker<sup>1</sup>, JH Dales<sup>2</sup>) in the late 1960s and adopted in US markets for lead, nitrogen oxides and sulphur dioxide in the 1970s and 80s. The success of these markets in reducing emissions at costs up to 50% less than prescriptive regulation<sup>3</sup> and their coincidence with the heyday of neoclassical economic theory led to the US advocating for tradable permits as a flexibility mechanism during the Kyoto Protocol negotiations. The US' command of the technical jargon of pollution trading and the opulent resourcing of its negotiation team, supported by another nation in the grip of neoliberal fever, New Zealand, led to the idea of tradable permits being successfully pressed on the UN and incorporated into the Protocol<sup>4</sup>. The strategy proved so successful that, despite the protagonist failing to ratify the Protocol, it has become embedded in the conventional wisdom and its ideological origins have been forgotten.

The failings in practice of trading schemes have been extensively documented, especially those of the Kyoto Protocol and the EUETS. Three revisions of the latter have failed to correct major problems. Even the 'prototype' SO<sub>2</sub> trading scheme in the US owes much of its success to external factors, especially the ready availability of low-sulphur coal made accessible at low cost by the deregulation of railfreight. The NZ ETS has of course been particularly ineffective. Technical difficulties include those common to any system attempting to manage emissions (e.g. measurement and temporal/spatial boundary setting) and those specific to a market mechanism. The common issues have particular consequences in the market context, especially where reassessment in the light of new information leads to changes in established quantitative measures (e.g.LULUCF in the NZ ETS). There are significant transaction costs. The result is a high degree of complexity and indeterminacy.

Lastly, the commodification of the planet's capacity to act as a receiving environment for human waste products offends against the concept of a global commons and shows disrespect for Nature.

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

All of the changes listed would be of value.

34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

The value of urban intensification concentrated around public transport is contentious as the current response to intensification proposals under the Resource Management (Enabling Housing Supply and Other Matters) Bill has revealed. There is a substantial case for low-medium intensity suburban living as an ideal mode in the context of climate change. (see e.g. "Retrosuburbia: the Downshifter's Guide to a Resilient Future" by David Holmgren)

35. Are there any other views you wish to share in relation to planning? No

36. What are the big challenges, particularly around technology, that a mission-based approach could help solve? See comments above (Q 22).

37. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?

Despite the above criticism, targeted research is of value in these areas. 38. What opportunities are there in areas where Aotearoa has a unique global advantage in low-emissions abatement?

Given our temperate climate, abundant land relative to population and our unique indigenous biodiversity there is obvious potential in the bioeconomy.

39. How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?
40. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?
41. Are there any other views you wish to share in relation to research, science and innovation?

The role of these in achieving our goals in relation to climate change is important but should not be overemphasized or relied upon. It is more important to take immediate action using existing knowledge and means than to defer action or divert funding in anticipation of a scientific or technological 'breakthrough'.

42. What information, tools or forums would encourage you to take greater action on climate change?

Action on climate change needs to be embedded in everyday life. Our activities must be restrained to respect ecological constraints and directed to restore damage that has occurred.

43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

United Nations agencies, government and NGOs without a commercial agenda.

44. Are there other views you wish to share in relation to behaviour change?

Rational responses to the limited availability of fossil energy by businesses and individuals should suffice.

45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

46. How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?

47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?

48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

The recognition of the concepts of a circular economy and a bioeconomy at government level is one of the most promising results of deliberation on climate change action and we eagerly anticipate further developments. The Institute lacks sufficient experience to make a contribution in this submission but we look forward to deeper engagement.

49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

Barriers to the circular approach are embedded in the growth paradigm of our economy. The bioeconomy is constrained by the ready availability of non-biological materials and energy sources, especially extremely versatile petroleum. The development of a bioeconomy has been tragically delayed as a consequence.

50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

There is some anxiety that these radical concepts may be assimilated into the dominant growth paradigm and be effectively lost in the process.

52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

Support this target in general and especially the associated proposals for a national public transport network and for the repurposing of roading assets for use by active transport modes. A review of the public transport operating model would be of value if it can reduce the number of empty busses and similar futile service provisions determined more by contractual matters rather than any practical purpose. There seems to be an undue emphasis on promoting mass transport provision rather than directing effort toward reducing the need to travel. Capital investment in bikes to hire does not fit the circular economy model while so many older bikes are being discarded. The edict that added road capacity must be accompanied by parallel investment that avoids or reduces emissions needs to be strengthened to insist that such reductions must at least balance the embedded and operational emissions of the new capacity.

53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

It appears that this is in line with international changes by governments and manufacturers to favour zeroemissions vehicles.

54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

Replacement of both light and heavy traffic vehicles by low/zero emission vehicles incurs an unavoidable penalty by way of the embodied emissions of the new vehicles. At this late stage of the game in climate change it is no longer acceptable to simply expend the emission budget in anticipation of future emissions reduction. By our prevarication we have largely lost the opportunity to make the transition using fossil energy. This barrier applies to new building across all sectors of the economy and forces us to make choices about what we will spend the very limited carbon budget on. It seems unlikely that personal transport by light motor vehicle would make the cut.

It may be necessary under these constraints to retain more of the present ICE vehicle fleet (thus we oppose the idea of 'scrappage' incentives) and to operate them under a constrained fossil fuel supply supplemented as feasible by biofuels.

55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

There are major hurdles to be overcome in providing the feedstock for biofuels. An emissions intensity target suffers from the weakness of all intensity-based indices – they do not limit absolute emissions. The reduced emissions per km travelled may be overwhelmed by an increase in km travelled. There is abundant evidence that this is what occurs in practice.

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

See Q54

57. Are there any other views you wish to share in relation to transport?

Reducing the need to transport people and goods by providing the necessities of life locally is likely to provide the best outcome.

#### **Energy strategy**

58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

The main challenge for the energy strategy is how to maintain the welfare of citizens during the required energy descent. It is notable that there is no mention of reduced overall energy consumption or availability in the proposed action plan. Yet any serious analysis of the situation reveals that decreased use of fossil fuels must result in reduced energy given the high energy intensity of these fuels and the low intensity of their prospective replacements, excluding nuclear.

There is not space in this submission to enlarge upon this point but useful detail applied to the situation in New Zealand is provided in "Transition Engineering: Building a Sustainable Future" by Professor Susan Krumdieck of the Department of Mechanical Engineering at Canterbury University. Some pertinent quotes from this book:

"..reducing fossil fuel production and use is a major engineering challenge; it will not be the natural result of achieving viability of renewable alternatives."

"The challenge in this century is that the project of progress involves dramatic reduction of energy and material consumption."

"The fundamental problem in transition engineering is the substantial reduction in fossil fuel production and the sustained decline in energy supply and material consumption that will result."

The limitations of renewable energy (especially the matter of energy return on energy invested) are well covered in this book and also in the abundant publications by Ted Trainer.

The second major challenge, already mentioned in Q 54 above, is the problem of the energy that must be consumed and emissions consequently released in the process of transition to a low energy economy. This consumption and emission inevitably occurs in the construction of new low-emitting machinery and infrastructure as long as these cannot be constructed using renewable energy alone. This situation is likely to obtain for decades yet. If our emissions accounting is to have any credibility and usefulness, it must include these embodied emissions. If the transition itself is not to increase total emissions there must be a concurrent reduction in gross emissions equivalent to the 'transitional' embodied emissions. The process of transition will itself require the most constraint.

59. What areas require clear signalling to set a pathway for transition?

See Q 58

### Setting targets for the energy system

60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

100%

#### Phasing out fossil gas while maintaining consumer wellbeing and security of supply

61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Under the constraints of transition, and in the pursuit of a circular economy, as much of the existing gas infrastructure as possible should be retained and used for the provision of biofuel gas. The development of sufficient biogas supply is likely to ultimately determine the timeframe for substitution of fossil gas but constraint on gas supply will almost certainly be required in the interim. This is an expected part of the energy descent pathway.

#### Decarbonising the industry sector

62. How can work underway to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

63. Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?

The imposition of limits on fossil fuel availability will compel industrial decarbonisation without further effort.

# Addressing current data gaps on New Zealand's energy use and associated emissions through an Energy and Emissions Reporting scheme

64. In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold? Yes

65. We have identified a proposed threshold of 1 kt CO2e for large stationary energy users including commercial entities. In your view, is this proposed threshold reasonable and aligned with the Government's intention to meet emissions budgets and ensure an equitable transition?

66. In your view, what is an appropriate threshold for other large energy users such as transport companies?67. Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and EmissionsReporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed.

The Institute has insufficient experience of these issues to comment.

#### Supporting development and use of low-emissions fuels

68. What level of support could or should Government provide for development of low-emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

A high level of support is warranted for the development of renewable primary energy sources but less for secondary derived energy such as hydrogen unless this can be readily substituted for fossil gas in the existing infrastructure. Otherwise there are issues of diminishing energy return on energy invested and transitional embodied energy of new infrastructure and machinery.

69. Are there any other views you wish to share in relation to energy? Only to reiterate the importance of energy descent.

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this? Support

71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste? Uncertain

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

### See Q 61

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

Limit fossil fuel availability

74. Do you believe that the Government's policies and proposed actions to reduce building-related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

No comment

75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme? By consultation and involvement in implementattion

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

There is a strong case for regulation of building materials to include low embodied emissions and participation in the circular economy (i.e.reuseable, recyclable and ultimately burnable or compostable)

77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

Any of these although such incentivisation is not favoured overall as it retains the choice not to engage or purchase appropriately.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

See Q 76

79. What should the Government take into account in exploring how to encourage low-emissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

See Q 76 etc

80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time? 81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

Insufficient experience to comment

82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

The place of building and construction is so important in both present emissions activity and in determining the future path of emissions that it is essential that it is involved from the beginning of the plan.

83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions? a. How could the Government support the specific needs of Māori-collective land owners? Insufficient experience to comment

84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

As a consequence of the distinction between fossil carbon and short-term biological carbon, PIRM does not entirely support the proposed management of agricultural emissions. As forestry and other types of biological carbon sequestration can legitimately and in real world terms act as offsets for biological greenhouse gas emissions, there does not seem to be an imperative for reduction of biogenic methane if such offsets are used. Although there would be an additive benefit from absolute reduction in biological methane by reducing the number of ruminant animals, this offset opportunity could instead be used as an incentive for afforestation and other carbon sequestration measures. Culling cattle could be reserved for possible future use. Methane of fossil origin is of course integral with other fossil carbon emissions.

The lack of equivalence between fossil carbon and biologically sequestered carbon has been clearly recognised in the report by the Commissioner for the Environment **"Farms, forests and fossil fuels: The next great landscape transformation?"** released in March this 2019. This report identified the hazards for effective climate change mitigation that result from assumptions of equivalence and recommended a limitation of forestry offsets to biological emissions only. These critical matters in the Commissioner's report are in agreement with long held opinions of PIRM as stated in past Submissions.

We intend to submit on proposals for farm level emissions pricing in the near future.

85. What research and development on mitigations should Government and the sector be supporting?

See above

86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

88. Are there any other views you wish to share in relation to agriculture?

The report by the PCE referenced above is the most clear-sighted appraisal of the situation in agriculture and climate change and should inform action.

89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

While we support the target, our view regarding biogenic methane and its potential offsetting by carbon sequestration moderates our concerns around this gas.

90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)? Yes

91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

We do not favour financial instruments/pricing (dis)incentives in general

92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead? Yes

93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

Yes

94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

Yes. This is the bioeconomy in action.

95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste? Strongly support

96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?

Yes

97. Do you think the proposals outlined in this document should also extend to farm dumps? Yes

98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?

No

99. What other options could significantly reduce landfill waste emissions across Aotearoa? We will comment further in our submission on waste minimisation (in preparation)

Q 100 - 105

Insufficient experience to comment in detail but urge the minimisation of use of all such gases and the use of those with the lowest warming potential wherever possible.

106. Do you think we should look to forestry to provide a buffer in case other sectors of the economy underdeliver reductions, or to increase the ambition of our future international commitments?

We do not consider forestry offsetting of fossil emissions to be legitimate.

107. What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?

No comment

108. What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

Allow on-farm forestry offsetting of emissions

109. What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

All. For diverse reasons.

a. Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?

No. It is alarming to see the re-emergence of the concept of "optimal" emissions reduction regarding forestry, especially when NZ carries a large burden of historical emissions from land use changes.

b. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

110. If we used more wood and wood residues from our forests to replace high-emitting products and energy sources, would you support more afforestation? Why or why not? Yes – the rationale of the bioeconomy.

111. What role do you think should be played by:

a. central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment

b. the private sector in influencing the location and scale of afforestation? Please provide reasons for your answer.

No comment

112. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

113. From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?

114. Are there any other views you wish to share in relation to forestry?

None other than those expressed in many previous submissions regarding climate, change.

Yours sincerely,

Dr Cliff Mason for PIRM



24<sup>th</sup> November 2021

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### PUBLIC CONSULTATION ON TE HAU MĀROHI KI ANAMATA TRANSITIONING TO A LOW-EMISSIONS AND CLIMATE-RESILIENT FUTURE

Coca-Cola Europacific Partners New Zealand ("CCEP") welcomes the opportunity to submit on the Ministry for the Environment's ("Ministry") discussion document, *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future* ("Discussion Document")

CCEP is committed to making a distinct and positive contribution to the world in which we live.

As a leading beverage manufacturer in New Zealand, we're committed to understanding and minimising the impacts our operations may have on our environment.

We recognise the world is at a critical point and we must all play our part to cut Greenhouse Gas (GHG) emissions, to limit global temperature increase to 1.5°C and protect the future of our planet. Climate change may be bigger than all of us, but it is not beyond us. That's why we're working towards a Net Zero future by 2040.

We have put a green future at the heart of our vision for the business and our strategy. Through our environmental sustainability commitments – with our updated GHG emissions reduction target and net zero ambition at its core – we will do more to reduce our carbon footprint, create new packaging solutions, use less water and support our communities.

As a major business, we will use our voice to help drive the transition to a low-carbon future.

Coca-Cola Europacific Partners is a proud member of the Sustainable Business Council. The Sustainable Business Council (SBC) is a CEO-led membership organisation with over 100 businesses from all sectors, ambitious for a sustainable Aotearoa. CCEP endorses the recommendations SBC has submitted in response to this discussion document.

The three key areas in the discussion document that could provide greatest value to accelerate the decarbonisation of CCEP direct emissions are as follows:

### 1. Transport

- *Heavy Freight:* Increasing urgency for de-carbonising heavy freight by providing low-emission energy alternatives such as domestic green hydrogen
- *Rail:* Specific action to identify and overcome existing barriers to mode-shift that enables expansion of rail and coastal shipping

### 2. Process Heat

 Develop complementary measures to the Government Investment in Decarbonising Industry (GIDI) fund that support a wider range of companies to decarbonise: a bespoke solution for process heat conversions amongst the largest users; a smaller fund for SME process heat users; and de-risking long-term fuel costs where appropriate.

### 3. F-gases

• Implementation of Government funded commercial refrigeration subsidies to support the transition out of fluorinated gases.



In support of the SBC submission, comments on specific areas of interest to CCEP in the discussion document are set out as follows:

- Energy
- Transport
- F-Gases
- Waste
- Emission Pricing

# Energy & Industry

Headline Recommendation:

• Develop complementary measures to the Government Investment in Decarbonising Industry (GIDI) fund that support a wider range of companies to decarbonise: a bespoke solution for process heat conversions amongst the largest users; a smaller fund for SME process heat users; and de-risking long-term fuel costs where appropriate.

- Process Heat: We support acceleration of the energy industry switching to low-emissions fuels for
  process heat and the uptake of energy efficiency measures. We believe that on a \$/tCO2e basis, the
  most cost effective and time efficient change that we can make is in process heat. Process heat
  emissions reductions can be achieved with technology available today.
  - We support continuation of GIDI and recommend Government provide clarity on future rounds. One shortcoming of GIDI is that it is focused more on mid-sized users and –excludes those process heat users who are large or who are small.
  - We strongly support establishing a second fund to assist smaller users with a less stringent criteria around engagement.
  - We recommend that a program is undertaken to identify solutions to 'green' the North Island gas network



# Energy & Electricity Generation

Headline Recommendation:

• Adopt a 50 per cent renewable energy consumption target by 2035

- Electricity Generation: We support the CCC's recommendation to develop a long-term national energy strategy that provides clear objectives and a predictable pathway away from fossil fuels and towards low-emissions fuels, and the infrastructure to support delivery. We agree that this strategy is central to New Zealand's low carbon future. The industrial sector (particularly process heat) and the transport sector (particularly aviation) will be large consumers of biomass and green hydrogen. We recommend that the following are considered when forming the energy strategy
  - Clarifying the place of New Zealand's Energy Certificate System, and the effect of its carbon footprint on the wider electricity sector.
  - Investigation of whether policy measures could incentivise the uptake of solar photovoltaic panels in New Zealand. Accommodating a distributed generation model within the existing system will support management of supply and demand, increase resilience and ease the burden on energy sector capital investment.
- Role of Green Hydrogen: There is significant opportunity for green hydrogen to be used in industrial processes and recommend greater emphasis on the potential role of green hydrogen as a low-carbon fuel in the ERP. Green hydrogen is key part of the technology roadmap for zero emissions to decarbonise our heavy vechicle fleet.



# Transport

Headline Recommendations:

- **Zero-emissions vehicles**: Introduce a restriction on ICE light vehicles entering, being manufactured, or assembled in New Zealand by 2032 (for full ICE vehicles) and 2037 (for hybrid vehicles) that takes a systems-level approach to fleet transition and is informed by international supply.
- **Freight transport**: Adopt the initiatives recommended in the SBC Low Carbon Freight Pathway to keep a 50% reduction in emissions by 2030 and net zero for the sector by 2050 within reach.

- **Zero Emission Vehicles**: Low-emissions vehicles, including electric vehicles, will be an important part of the broad range of solutions that will be required in decarbonising Aotearoa's transport sector.
  - **Charging infrastructure**: We recommend for the introduction of co-investment for EV charging infrastructure to incentivise an accelerated rollout of infrastructure.
  - We particularly support work aimed at promoting the establishment of necessary infrastructure in rural areas
  - **Role of business:** Corporate fleets will play a major role in the move to electrifying light vehicles.
    - We recommend that government includes a specific action to consider the possible short-term impacts on businesses as they transform their fleet to lower-carbon assets.
    - We recommend government consider extending the Clean Car Discount threshold to cover light commercial vans, in order to reduce the total cost of ownership of these vehicles, and thereby support BEV uptake across the commercial fleet
    - We support work safe guidelines be modified for the charging of EV's in a garage
- **Freight Transport:** The Low Carbon Freight Pathway shows a greater emissions reduction goal for freight can be set, but work needs to start now. We think leaving the actions to be developed in the second and third budget is out of pace with the urgency for de-carbonising heavy freight
  - **Low-Carbon Fuel**: We Support the uptake of low-carbon fuels & we recommend more targeted approach in identifying and removing barriers to the uptake of low-carbon fuels.
    - We recommend gathering the evidence on the expected demand for biofuels and hydrogen through to 2050 from different sectors, and on the demand for electricity required to support the domestic production of green hydrogen. The electricity sector needs to be involved in designing and following through on the transport sector's transition.
    - We support the consideration of domestic production of biofuels & recommend that the domestic production of biofuels is placed within a broader bioeconomy strategy for Aotearoa.
    - We support the development of green hydrogen as a solution for our heavy haulage fleet
  - *Rail:* Mode -shift targets must be informed by a good understanding of the capacity available on rail and coastal shipping to meet the potential demand for mode shift.
    - We support market research to explore bringing to life an increased use of rail, the expansion into rail is a current barrier for us due to infrastructure
    - We recommend that the ERP includes a specific action for identifying barriers to mode-shift realistic mode-shift targets be considered to be included in the ERP.



# **F-Gases**

Headline Recommendation:

• We support that emissions from fluorinated gases must be reduced. However, there are some constraints on the speed we can reduce emissions from fluorinated gases which should be taken into account when setting the target dates.

- Phasing down HFC: The discussion document allows for Government to "fast track progress through a cross sector reduction of HFC refrigerants in heating and cooling systems". The transition of most models now are achievable but solutions are yet to emerge for some Frozen Carbonated Beverage (FCB) and Ice Machines which still use HFC.
  - If progress is fast-tracked, we recommend that Government provide financial assistance for the purchase of equipment required to service and maintain HC equipment safely given it is a flammable gas.
  - We also recommend that Government provide subsidies and rebates like they do for cars and heat pumps. For example, the New South Wales state government offers a commercial refrigerator rebate.
  - We generally support restricting the import or sale of finished products that contain highglobal warming potential HFCs but only to the extent that there are alternatives available that can be safely serviced and maintained.
- **Other ways of reducing refrigerant emissions**: the following ways to support the acceleration of refrigerant emissions reductions:
  - listing refrigerant technicians as a skills shortage to grow and relieve a pressured and small group of technicians currently servicing the industry;
  - subsidisation or rebate schemes for replacement of legacy systems with equivalent lower GWP systems;
  - Reduce the volume of refrigerants used in equipment; and putting in preventative maintenance programmes.
  - We also recommend that government consider natural refrigerants, which are available already (R290) and commonly used, as alternatives to HFC refrigerants that New Zealand could utilise.



# Waste

### Headline Recommendation:

• CCEP acknowledge that our indirect emissions such as packaging & ingredients have a part to play in reducing our total emissions. The Waste Strategy and Emissions Reduction Plan have independent discussion documents. They are strongly interconnected, and we encourage the waste strategy is approached through the lens of carbon mitigation, they cannot be implemented in isolation from each other. Another important point to make concerns the relationship between biogenic methane and waste.

- Methane & Waste: Equitable Burden
  - The Climate Change Response (Zero Carbon) Amendment Act 2019 legislated the goal for biogenic methane emissions to reduce by 10 percent less than 2017 levels by 2030, and then reduce by a further 24 to 47 percent less than 2017 levels by 2050. The Waste Strategy calculated that only 9.1 percent of biogenic methane emissions were derived from waste. One sector, agriculture, is responsible for the rest. The Minister for Climate Change's emissions reduction plan consultation document, where the biogenic methane target for waste was raised from 15 to 40 percent on the advice of the Climate Change Commission, was based on the then NDC of reducing net emissions to 30 percent below 2005 gross emissions levels.
  - New Zealand has since raised it NDC to 50 percent (or 41 percent, as has been calculated). New Zealand also signed on to an international coalition of some 100 countries at COP 26 that pledged 30 percent biogenic methane reductions by 2030, bring it into conflict with the legislatively mandated targets established in the Climate Change Response (Zero Carbon) Amendment Act 2019. While the Minister for Climate Change has signalled the Government will look to the international carbon markets to meet two-thirds of our raised NDC obligations, there remains uncertainty about what effect these fresh Government commitments will have on domestic emissions reduction plans for waste (i.e., how will the missing third of our raised obligation be distributed amongst different sectors). CCEP would like to state that the first principle that needs to be followed by the Government, when it deliberates and reconsiders its Emissions Reduction Plan in 2022, is equity. That is, emissions reductions from waste must be proportional to the 9.1 percent contribution of waste to biogenic methane emissions. The Government must not leverage, in other words, even greater biogenic methane reductions in waste, which would have the effect of cross-subsidizing agriculture sector reductions.
- Emission reductions gained through circular economy
  - We support emission reductions gained through a domestic circular economy, for packaging in particular, please refer to other submissions to the Ministry for the Environment. Full views on reducing emissions associated with waste are shared in our Waste Strategy submission.



# **Emission Pricing**

Headline Recommendation:

• Provide certainty on the projected price corridor for NZUs under the ETS by working with business to develop a shadow carbon price to inform investment decisions.

Support & specific recommendations

- We agree, as the discussion document says, that achieving a high-value, resilient economy will require clear signalling of the low-emissions pathway. Understanding the likely price path for NZUs is key to that signal, and the ability of businesses to be able to plan.
- We recommend that government provide clarity on the likely future price corridor for NZUs under the NZ ETS and the major assumptions underpinning that work. We recommend government work closely with the private sector to develop a shadow price of carbon which represents a realistic future price path that businesses can consistently and reliably factor into decision making

In conclusion, CCEP supports the vision and purpose of the Governments Emission Reduction Plan.

We support a fair, equitable and inclusive transition to a sustainable, climate-resilient and zero carbon Aotearoa New Zealand.

We are ready to work alongside the Government to develop a plan that will deliver a transition path that's clear, ambitious and affordable.

We support a genuine, active, and enduring partnership with iwi/Māori, working together will we be able to bend New Zealand's emissions curve in the short amount of time we have left.

Sustainability, Innovation & Strategic Projects Manager Coca-Cola Europacific Partners New Zealand



# About Coca-Cola Europacific Partners

Coca-Cola Europacific Partners is one of the leading consumer goods companies in the world. We make, move and sell some the world's most loved brands – serving 600 million consumers and helping 1.75 million customers across 29 countries grow. We combine the strength and scale of a large, multi-national business with an expert, local knowledge of the customers we serve and communities we support. Having access to millions of consumers through more than 15,000 active customers, we are committed to leading through innovation, building a sustainable future and delivering long-term value to shareholders. Coca-Cola Europacific Partners New Zealand employs over 1,000 people and indirectly creates thousands more jobs across the supply chain and with key suppliers.

Coca-Cola Europacific Partners is listed on Euronext Amsterdam, the New York Stock Exchange, London Stock Exchange and on the Spanish Stock Exchanges, trading under the symbol CCEP. For more information about CCEP, please visit www.cocacolaep.com and follow CCEP on Twitter at @CCEP

| From:    | Colin Kells                         |
|----------|-------------------------------------|
| Sent:    | Monday, 22 November 2021 3:08 pm    |
| To:      | climate consultation 2021           |
| Subject: | Carbon removal to save the climate. |
|          |                                     |

# MFE CYBER SECURITY WARNING

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In addition to reducing CO2 production, how about removing existing Carbon from the atmosphere. See <u>https://climeworks.com</u>.

**Regards Colin Kells** 

From:Sent:Wednesday, 24 November 2021 12:27 pmTo:climate consultation 2021Subject:Combined Taranaki Councils' Submission on Te hau mārohi ki anamata - Transitioning to a low-<br/>emissions and climate-resilient future, draft national Emissions Reduction PlanAttachments:Taranaki\_Mayoral\_Forum - MFE\_Emissions\_Reduction\_Plan\_Submission to the Climate Change<br/>Commission - signed - 2021 03 23.pdf; TRC Submission\_on\_Climate\_Change\_Commission\_-\_Final<br/>2021 03.docx

# MFE CYBER SECURITY WARNING

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Kia ora, please find attached a submission on the above consultation document from the Taranaki Mayoral Forum, comprising the Mayors of New Plymouth, Stratford and South Taranaki District Councils, and the Taranaki Regional Council Chairperson.

As referenced in the Mayoral Forum submission, I also attach original submissions to the Climate Change Commission from NPDC, STDC and TRC from March 2021, which discuss many of the same points raised in the Mayoral Forum submission on this round of consultation.

If you have any queries, please don't hesitate to contact me.

Ngā mihi nui,



**Kaihautū Toitū te Taiao | Environment and Sustainability Manager** Te Kaunihera ō Taranaki ki Te Tonga | South Taranaki District Council 105-111 Albion Street | Private Bag 902, Hāwera 4640, NZ

www.southtaranaki.com

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Te Kaunihera-ā-Rohe o Ngāmotu NEW PLYMOUTH DISTRICT COUNCIL \_\_\_\_\_\_\_\_\_ newplymouthnz.com





24 November 2021

Emissions Reduction Plan consultation, Ministry for the Environment, PO Box 10362, Wellington 6143

### Submitted by email to: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

Dear Sir/Madam,

### Combined Taranaki Councils' Submission on *Te hau mārohi ki anamata*, Transitioning to a lowemissions and climate-resilient future, draft Emissions Reduction Plan

We thank the Ministry for the Environment (the Ministry) for the opportunity to comment on Te hau mārohi ki anamata.

As the three territorial authorities and the regional council (the Councils) responsible for implementing a large part of Taranaki's transition to a low-emissions future, we have particular interest in the consultation process informing Aotearoa New Zealand's National Emissions Reduction Plan. We recognise our role in leading, supporting and coordinating Taranaki's just transition to a low-emissions economy through our regulatory and non-regulatory functions. We also recognise the unique relationships the Councils have with their local communities, businesses, tangata whenua and iwi and hapū partners. These relationships will be essential if our transition is to be a just one for all our communities.

The Councils continue to work collaboratively on a number of the key reforms facing the sector and the region, including climate change, future of local government, resource management reform and three waters. We have prepared this combined submission on some high-level points in response to *Te hau mārohi ki anamata* to speak with a single "Taranaki Voice" that we feel better represents and promotes the interests of the communities and the region we serve. We trust that the Ministry also recognises the strength of this unity.

Our Regional Economic Development Agency Te Puna Umanga Venture Taranaki have also submitted on matters relating to how the ERP addresses wider economic development for the Taranaki region. While we are collectively not signatories to that document, we support their intent in making their submission.

We offer qualified support for *Te hau mārohi ki anamata* and the direction that government is proposing, subject to the specific comments contained below. Many of these points were points that we already raised in each Council's submissions to the Climate Change Commission on their "Climate action for Aotearoa" draft advice package. We attach those original submissions again to this submission for MFE's reference and integration into the finalised ERP.

For the people of Taranaki, there are some important considerations below that we would like the Ministry to consider and incorporate as part of this opportunity for consultation and feedback, and we wish to emphasise the following key points:

- The need for clarity around Aotearoa New Zealand's plans to reduce emissions
- Concerns around a one-size fits all approach to emissions reductions
- Ongoing reforms and Covid19
- General support for plans to reduce emissions
- The need for greater clarity on local government's role.
- Centralisation without clear co-ordination

### The need for clarity around Aotearoa's plans to reduce emissions

The Councils express disappointment that *Te hau mārohi ki anamata* does not provide the necessary clarity and direction for how New Zealand will reduce emissions to further inform our submission.

Te hau mārohi ki anamata is not a draft National Emissions Reduction Plan, but a list of current actions, policies and potential options being explored by government, many of which have been consulted on by other agencies. There is also a distinct lack of information about how the potential actions will be implemented, or indeed prioritised.

It is a missed opportunity that we are not able to feedback on the specific issues that are important to Taranaki. This is particularly disappointing due to the disproportionate impact Taranaki will feel in the transition compared to other regions.

### Concerns around the one-size fits all approach to emissions reductions

Te hau mārohi ki anamata takes a one-size fits all approach to reducing emissions, and largely disregards the disproportionately high impacts to regions like Taranaki, compared to other regions with lower per-capita emissions profiles.

Transitioning to a new environmental limits regime will be a significant issue for Taranaki, so realistic regional planning to enable this needs to be implemented with support from central government. We therefore submit that, when finalised, the National Emission Reduction Plan should consider detailed regional effects of emissions targets, economic impacts and social impacts.

Finally, the Councils are disappointed to see that the "working together in new ways" section (p 34) does not include local government as a part of the proposed partnership. We feel that this omission is a significant oversight.

### **Ongoing reforms and COVID-19**

It is of note that our communities are both directly and indirectly impacted by the scale and breadth of the reforms which are afoot at present. The COVID-19 pandemic remains a source of instability while the forthcoming National Emissions Reduction Plan sits alongside major reforms in health, three waters, local government and the Resource Management Act.

Both these reforms and the pandemic necessarily create uncertainty and instability for people as residents, employees and investors in our region. It is requested that this uncertainty and its impacts be acknowledged and minimised by transparent communication and well-planned action from government.

### General support for plans to reduce emissions

Reducing emissions in Taranaki means transitioning our economy and the way we do things across our communities. The local economy in Taranaki is predominantly comprised of industrial manufacturing, oil and gas, and primary industries, all of which will be affected by emissions reductions targets, carbon pricing and any future biogenic methane pricing.

The shifts required of the region are well documented through Taranaki 2050 and Tapuae Roa. These need adequate support to ensure the region transitions to a low-emissions economy while keeping the things that are great about Taranaki, and planning for inclusive growth.

The Councils offer general support for emission reduction options and initiatives across different sectors, and note the following:

• Energy

We support, in principle, the decarbonisation of the energy sector and the renewable targets set out in *Te hau mārohi ki anamata*. However, we caution the phase out of fossil fuels prior to available, economically viable technology alternatives (especially for the hard to abate manufacturing and commercial transport sectors).

We agree with the need for a Strategy to guide our energy transition, but this must be codesigned and developed in collaboration with all affected parties. In particular, this strategy needs a clearly articulated plan on how to meet the energy trilemma: affordability, access and energy security.

We acknowledge the importance of the Emissions Trading Scheme to achieving emissions budgets and support recommendations from the Climate Change Commission to review industrial allocation of New Zealand Units to ensure that emissions intensive and trade exposed industries, such as the Taranaki petrochemical sector, does not drive emissions leakage offshore.

<u>Agriculture</u>

The Councils support the general intention of *Te hau mārohi ki anamata*'s proposal to support a lower carbon agricultural sector. However, Taranaki farming communities will need to be provided with comprehensive support and training and be enabled to invest in real-world onfarm technology and initiatives to enable them to successfully transition to low-carbon farming methodologies.

• <u>Transport</u>

The Councils acknowledge that centres with large populations will be advanced a greater and earlier share of investment in low carbon options. However, in order not to exacerbate equity issues, Taranaki requires support as we pursue the required innovative thinking to resolve our transport challenges.

Taranaki is a predominantly rural region, with a mid-sized city and several smaller urban areas dispersed over a large geographic area. Our rural economy and communities' mobility and connectivity are heavily road and vehicle dependent, with few alternative transport options available. Our rural areas have a low level of public transport options when compared with more urbanised districts or regions, with low patronage and limited electric vehicle infrastructure.

Councils will need significant funding to incentivise active/shared transport options everywhere, including small rural towns. Regional communities will be significantly impacted if the government activates levers to deter the use of Internal Combustion Engine cars while not providing suitable alternatives, creating barriers for accessing employment, education, health and social infrastructure in Taranaki.

### <u>Tangata whenua partnerships</u>

The Councils support the Ministry's commitment to a greater role for tangata whenua to partner, be included in planning and help implement the initiatives proposed in *Te hau mārohi ki anamata*. Based on our experience in working with the Iwi of Taranaki, the strongest partnerships and best results for all parties come when that relationship recognises the high resource demands being placed on tangata whenua by a range of policy measures.

Ensuring that adequate funding and resourcing be made available from central government to ensure tangata whenua are enabled to engage in planning, decision-making and implementation of emissions reduction and climate change adaptation work programmes will therefore be key. Partnering with tangata whenua to determine both the areas and approaches that best suit them (at both national and regional levels) is also a measure that the Councils would strongly encourage the government to follow.

### Waste, circular economy

We support the package of measures for the waste sector, and the circular economy approach. We believe that these measures will also have large knock-on positive impacts for improving many of our other environmental problems.

Taranaki works regionally on waste minimisation and there is considerable expertise in waste prevention, management and minimisation. The region is in a strong position to contribute more directly to central government decision- and policy-making in this area.

### • Forestry, native planting

We are supportive of the proposal within *Te hau mārohi ki anamata* of increasing the focus on balancing planting of both native forests and plantation forestry. The region has invested significantly in riparian planting and recently committed to reaching its 10% biodiversity target in New Plymouth City.

We are supportive of any recommendations to extend grant schemes such as One Billion Trees (or an equivalent scheme), or to create ecosystems payments. We would like further clarity on how this could be enabled and aligned with the Emissions Trading Scheme.

However, we note there are demonstrable negative economic effects from large-scale replacement of farms with forestry in the Taranaki eastern hill country. We submit that the government needs to include large-scale land use change and its socioeconomic and environmental impacts in any transition planning for rural communities.

We submit that government enables measuring the carbon capture of small-scale native planting blocks, which are often individually small but cumulatively large and offer co-benefits to sequestration such as biodiversity and landscape-scale vegetation corridors.

### The need for greater clarity on local government's role

Local government plays a key role in reducing emissions through decarbonising our own operations and advocating for our communities to lower their emissions. Many of the proposed recommendations to lower emissions in *Te hau mārohi ki anamata* rely on local government implementation. To achieve the pace and scale of transition proposed by the Ministry, a coordinated and aligned effort will be needed between local and central government.

References to local government partnerships are unclear within *Te hau mārohi ki anamata*. *Te hau mārohi ki anamata* provides little detail on funding for key proposals and policies suggested to help reduce emissions. The Councils submit that the National Emissions Reduction Plan detail how local government will be supported and funded to help deliver emissions reduction activities across key regulatory and non-regulatory functions.

### Centralisation without clear co-ordination

Allied to the need for clarity on local government's role in this transition is a concern at the proposed level of centralisation and lack of clarity in *Te hau mārohi ki anamata* on how cross-government collaboration will be achieved.

The Councils note the proposal to generate 16 strategy documents to support the National Emissions Reduction Plan, which alongside the ongoing reform, has potential to create further complexity in an already complex landscape. The Councils support the calls for greater cross-government coordination and accountability in *Te hau mārohi ki anamata*. However, references to departmental accountability and cross department groups need greater detail in the final plan to provide assurance of their effectiveness.
We submit that Government should be providing clear guidance to local communities, and empowering them to develop solutions that can roll up to national level solutions. Taranaki's experience with Taranaki 2050, Tapuae Roa and current agricultural energy and waste-to-energy projects could be instructive in this capacity.

#### Conclusion

The Councils request that in finalising the National Emissions Reduction Plan, particular emphasis be placed on unique regional perspectives and positioning, such as the disproportionately large impact emissions reduction activities will have on Taranaki.

Transitioning to new environmental limits regime will be a significant issue for this region, so realistic regional approaches will need to be adopted, with support packages from central government partnering with local government. The significant regional impacts of this transition require further consideration, funding and place-based planning and implementation to ensure the region can successfully and equitably transition to a low-emissions economy.

We submit that in order to successfully implement the National Emissions Reductions Plan, maximising the emissions reduced and ensuring a just transition, partnership between central government and local government is required. Taranaki Councils welcome working with central government and our Taranaki iwi partners to develop a transition programme that is achievable and fit for purpose for Taranaki. In doing so, the Councils will continue to broaden and strengthen our efforts to speak with our single "Taranaki Voice" as we advocate for the cultural, social, environmental and economic well-being of our region.

Yours sincerely,



Mayor Phil Nixon South Taranaki District Council Stratford District Council



Mayor Neil Holdom New Plymouth District Council



Mayor Neil Volzke



David MacLeod Taranaki Regional Council Chair

Climate Change Commission Secretariat Level 21, 1 Willis Street Wellington 6011 PO Box 24448 Wellington 6142

## South Taranaki District Council submission to the Climate Change Commission on *Climate Action for Aotearoa 2021*

The South Taranaki District Council (STDC) are pleased to submit on the Climate Change Commissions "Climate action for Aotearoa" draft advice package to the Government.

STDC agrees that action is required at all levels of government and society to respond to climate change and reduce the risk of further harm, by beginning to reduce emissions. We support this being achieved in accordance with the best available science.

Specifically, relevant to South Taranaki, there are some important considerations we would like the Commission to consider as part of this opportunity for consultation and feedback:

#### **Alternative transport limitations**

 Decarbonising our transport networks will be much more difficult than in urbanised areas. South Taranaki is a predominantly rural region with several smaller urban areas dispersed over a large geographic area. Our communities' mobility and connectivity are heavily road and vehicle dependent, with few alternative transport options available. We have a very low level of public transport options when compared with more urbanised districts or regions, with low patronage and limited electric vehicle infrastructure.

#### Land use opportunities

- Land use and topography in the district and region presents significant opportunities for biological carbon removals and offsetting.
- Our climate, offshore wind and land use present opportunities for further developing significant renewable energy infrastructure.

#### A fair and equitable transition is the key

- Our local economies are predominantly comprised of industrial manufacturing, oil and gas, and primary industries, all of which will be affected by emissions reductions targets, carbon pricing and any future biogenic methane pricing.
- Our district also has large variability in socioeconomic status, income and average wages, access to health services and access to infrastructure services. Māori are disproportionately represented in deprivation statistics.
- For South Taranaki, equitability is critical to the success of the Commission's emissions budgets, the emissions reduction plan and long-lasting climate action.
- As a small Council, STDC is already challenged by resourcing (both financially and through staff time) the large-scale transformational changes occurring to water infrastructure and other ongoing environmental legislative reform.
- To successfully achieve an equitable and just transition and align with the decreasing trajectory of emissions budgets in your draft package of advice, STDC and the communities we serve will need significant funding and resourcing assistance from central government.

While the national direction around climate change and emissions reduction budgets is largely led by central government, we know that local government has an important responsibility to work together with central government towards our national emission reduction targets and to support building resilience in our communities for a transition to a low emissions future. We recognise that Councils can lead by example to achieve a low emissions transition by

- aligning our organisational emissions targets with national emissions targets,
- establishing best-practice and standardised measurement and reporting processes,
- implementing actions to reduce emissions and improve the resilience of our communities.

We recognise our role in leading, supporting and coordinating South Taranaki and Taranaki's just transition to a low emissions society through regulatory and non-regulatory functions. We also recognise the unique relationships councils have with their local communities, businesses, tangata whenua and iwi and hapū partners. These relationships will be essential if our transition is to be a just one for all our communities.

STDC is currently establishing its own organisational emissions measurements and reporting processes, and we are exploring whether there is a possibility to undertake a collaborative regional approach to climate change adaptation with the other Taranaki-based Councils.

We see this submission as an opportunity to provide feedback on whether the emissions budgets and emissions reduction plan will support the needs of South Taranaki and enable a fair and equitable transition for our communities. Further responses to the consultation questions are detailed in the attached Table (Attachment 1).

STDC submits that the Advice should be reissued with regional breakdowns of emissions targets, economic impacts and social impacts, as a nationwide approach does not sufficiently detail the potential and relatively large impacts to regions like Taranaki, compared with other regions with lower emissions profiles. STDC can assist the Commission in further understanding our region and district's unique context and to help our communities achieve a just transition to a low-emissions, equitable future. We also offer to provide further feedback and to regularly contribute throughout the Commission processes.

Nā mātou noa, nā

#### Regards



Phil Nixon Koromatua o Taranaki ki te Tonga / Mayor of South Taranaki

Submission will be lodged online at: https://haveyoursay.climatecommission.govt.nz/

## Table 1: Consultation Questions and STDC responses

| Te Kaunihera     | CONSULTATION QUESTION   |    | OUR VIEWS AND RESPONSES   |  |  |  |
|------------------|---|----|---|--|--|--|
| Sound<br>Distric | Do you support the principles we<br>have used to guide our analysis?<br>Is there anything we should<br>change, and why?   | 30 | <ul> <li>STDC are generally supportive of the seven principles.</li> <li>However, we would like to submit that Te Ao Māori and Mātauranga Māori should be added to Principle 3 to inform the development of options, as that will add a comprehensive holistic environmental lens that considers consequential actions and balance.</li> <li>Further definition and clarity around what "adaptation" and "increasing resilience" actually means or looks like for communities would be useful for future planning at both central and local government levels, as well as at a more localised community-based planning level.</li> </ul>  |  |  |  |
|                  | 2. Do you support budget<br>recommendation 1? Is there<br>anything we should change, and<br>why?  | 31 | STDC supports the emissions budget recommendations.   |  |  |  |
|                  | 3. Do you support our proposed<br>break down of emissions budgets<br>between gross long-lived gases,<br>biogenic methane and carbon<br>removals from forestry? Is there<br>anything we should change, and<br>why? |    | STDC is generally supportive of this approach. However, we also recommend that the Climate Change Commission consider including further detail around how other blue-green carbon sinks as well as forestry can be utilised in their approach to biological carbon removals, e.g., wetlands, mangroves, peatlands, seagrasses, and natural regeneration. We strongly advocate for the roll-out of a comprehensive and well-funded incentivisation, support, education and advisory package to assist our farming communities to quickly transition their current farm management practices to environmentally friendly and lower emissions methods. As noted in the Commission's advice, these types of practices and technologies are already available in many cases, but their roll-out and widespread adoption needs to be accelerated. For example, there is potential for on-farm soil carbon sequestration through regenerative farming practices (once these have been proven to be effective under New Zealand conditions), new technologies to reduce methane output from cows (e.g., methane-reducing vaccinations and adding seaweed to cattle feed to reduce their methane output etc), and riparian and on-farm planting to reduce nett on-farm emissions, but the cost and resource-intensity of adopting many of these new technologies can be a barrier. |  |  |  |

|  |    | We would support the government developing policy and funding mechanisms that incentivise, encourage and reward carbon sinks that achieve multiple environmental outcomes in addition to carbon sequestration, such as improving the sequestration potential of our soils, creating and restoring wetlands, supporting the growth of native species and ecosystems for the purposes of rongoa, providing habitat for taonga species, improving biodiversity and habitat corridors, and reducing sedimentation into waterways etc. |
|--|----|---|
| <ul> <li>Limit on offshore mitigation for<br/>emissions budgets and circumstances<br/>justifying its use</li> <li>4. Do you support budget<br/>recommendation 4? Is there<br/>anything we should change, and<br/>why?</li> </ul> | 38 | STDC support limiting offshore mitigation to ensure that, as a country, we are prioritising emissions reduction over offsetting.  |
| <ul> <li>Cross-party support for emissions<br/>budget</li> <li>5. Do you support enabling<br/>recommendation 1? Is there<br/>anything we should change, and<br/>why?</li> </ul>  | 40 | STDC supports the Minister of Climate Change seeking cross-party support for the country's emissions budgets. This will be essential to ensure long-term, cross-generational buy-in to the actions needed over the coming decades.  |

| CONSULTATION QUESTION                        | PAGE | OUR VIEWS AND RESPONSES   |  |  |  |
|--|------|---|--|--|--|
| <b>Coordinate efforts</b> to address climate | 42   | STDC supports consolidating efforts to address climate change across Government, and we suggest that there              |  |  |  |
| change across Government                     |      | to be more explicit emphasis on reviewing and transforming existing work programs across government agencies to         |  |  |  |
| <b>b.</b> Do you support enabling            |      | achieve the zero-carbon objectives and recommendations in this draft advice.  |  |  |  |
| apything we should change and                |      |   |  |  |  |
| why?   |      |   |  |  |  |
| Genuine, active and enduring                 | 43   | STDC supports this recommendation, it is critical for councils to work with hapu/iwi to bring Te Ao Maori and Tikanga   |  |  |  |
| partnership with iwi/Māori                   |      | Maori into our future adaptation and mitigation activities. However, this is resource intensive for both partners.      |  |  |  |
| 7. Do you support enabling                   |      |   |  |  |  |
| recommendation 3? Is there                   |      | Therefore, we seek the inclusion within Recommendation 3 that funding and resourcing is made available to both          |  |  |  |
| anything we should change, and               |      | Local Government and hapū /iwi for engagement, planning, decision making and implementation.                            |  |  |  |
| why?   |      |   |  |  |  |
| Central and local government                 | 43   | STDC support this recommendation and agree that legislation and policy need to be aligned to enable Local               |  |  |  |
| working in partnership                       |      | Government to make effective decisions and implement work programmes around climate change and emissions.               |  |  |  |
| 8. Do you support enabling                   |      | We recommend that a National Policy Statement and National Environmental Standard are developed to support              |  |  |  |
| recommendation 4? Is there                   |      | standardised implementation by local government for these work programmes.  |  |  |  |
| anything we should change, and               |      | Many of the recommendations to achieve emissions reduction in the report value on local accomment to drive              |  |  |  |
| wnyr   |      | here is a series of the recommendations to achieve emissions reduction in the report rely on local government to drive  |  |  |  |
|  |      | benaviour change and private emissions reductions (e.g. transport, waste, land-use, drban form etc).                    |  |  |  |
|  |      | STDC would like clarity on who is responsible for tracking climate change work plans at district-, regional- and        |  |  |  |
|  |      | national-levels, and on how alignment will be implemented and assessed at a consent and monitoring level.               |  |  |  |
|  |      |   |  |  |  |
|  |      | We also have concerns regarding regional and district-level differences in terms of transition challenges – one size    |  |  |  |
|  |      | will not fit all. For example, in South Taranaki, our local economy and communities are heavily dependent on            |  |  |  |
|  |      | agriculture, heavy industry and oil and gas. All of these will be heavily impacted by the recommendation in this        |  |  |  |
|  |      | package. To successfully achieve an equitable and just transition and align with the decreasing trajectory of emissions |  |  |  |
|  |      | budgets in your draft package of advice, STDC and the South Taranaki district will need significant funding and         |  |  |  |
|  |      | resourcing assistance from central government.  |  |  |  |
|  |      | There is limited recoursing and staff canacity and canability at local government level for these new erges of work     |  |  |  |
|  |      | We would like the government work plan to consider how to address resourcing and training for staff and clarify         |  |  |  |
|  |      | funding streams to ensure local government can carry out the necessary work within the required timeframes              |  |  |  |
|  |      | funding streams to ensure local government can carry out the necessary work within the required timeframes.             |  |  |  |

| CONSULTATION QUESTION  | PAGE | OUR VIEWS AND RESPONSES  |  |  |  |
|--|------|--|--|--|--|
| Continued<br>Central and local government<br><b>working in partnership</b>   |      | We strongly advocate for funding mechanisms and funding to be made available urgently for local government, including funding models that local government could administer to support action by the community for initiatives such as green infrastructure and improving community resilience. Funding mechanisms should also be made available to support Councils to reduce their own emissions, and this funding should be enduring and sustainable.   |  |  |  |
|  |      | -unding will enable Councils to lower their emissions quicker than the current Long-term Plan cycles and limite funding streams allow.   |  |  |  |
| Establish processes for incorporating  | 44   | STDC supports this recommendation. However, we note that the short timeframes of this current roun   |  |  |  |
| <ul> <li>the views of all New Zealanders</li> <li>9. Do you support enabling<br/>recommendation 5? Is there<br/>anything we should change, and<br/>why?</li> </ul>   |      | consultation for such a large and influential report and corresponding body of evidence are inadequate.  |  |  |  |
| Locking in net zero  | 49   | STDC is supportive of prioritising the decarbonisation of long-lived gases and increasing the focus on planting native   |  |  |  |
| <ul> <li>10. Do you support our approach to focus on decarbonising sources of long-lived gas emissions where possible? Is there anything we should change?</li> <li>11. Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change, and why?</li> </ul> |      | forests and balancing native forests with non-invasive plantation forestry. STDC would like to see funding for local government to lead this work, in collaboration with Iwi-hapū and our local communities.<br>This approach will have many localised benefits for wider environmental values, including native biodiversity and taonga, improving water quality, reducing soil erosion, and improving nutrient cycling and regulation. Indigenous forests are a far greater long-term carbon store than mono-culture plantation forests and provide greater habitat complexity and food availability for all species, as well as providing opportunities for rongoa and kai. |  |  |  |
| Our path to meeting the budgets<br>12. Do you support the overall path<br>that we have proposed to meet<br>the first three budgets? Is there<br>anything we should change, and<br>why?   |      | STDC supports the overall pathways described throughout Chapter 3 and agrees that we should be working on both decarbonising the economy and planting long-lived non-invasive forests to offset emissions that cannot be reduced.<br>However, as mentioned elsewhere, South Taranaki and the wider region will be disproportionately impacted by the proposed changes to the transport, energy, forestry and agriculture sectors. We reiterate the urgent need for targeted regional and local funding models to be put in place to enable local government to respond as appropriate for our recently declared national "climate crisis".                                     |  |  |  |

| CONSULTATION QUESTION  | PAGE | OUR VIEWS AND RESPONSES   |
|--|------|---|
| <ul> <li>An equitable, inclusive and</li> <li>well-planned climate transition</li> <li>13. Do you support the package</li> </ul>   | 103  | An equitable and fair transition is very relevant for South Taranaki's communities and our agricultural, industry and forestry economies. We have communities that will be particularly affected by climate change: rural, remote, with limited access to public services, road and driving dependent, coastal/low-lying, and with some areas of social deprivation.  |
| of recommendations and<br>actions we have proposed<br>to increase the likelihood of<br>an equitable, inclusive and<br>well-planned climate<br>transition? Is there anything<br>we should change, and<br>why? |      | We are supportive of localised transition planning and training to grow a South Taranaki workforce that will enable continued employment, re-training and redeployment to new opportunities, and that will mitigate long-term job losses. We advocate for funding models for local government to help support this transition, as well as funding models directly to education providers, community organisations and iwi and hapū.<br>The CCC's draft advice notes on page 96 that Taranaki has already started strategic transition planning. This planning phase is now complete, and it is imperative that this transition planning be further supported and funded through its implementation phase. The region has been having transition discussions since 2018, and is ready to pilot, support and lead on transition technology for the country. This needs to be led by Government to signal transition programs of work are viable and have begun to be implemented. STDC notes the opportunity for renewable energy technologies considered |
|  |      | for Aotearoa to be commercialised through Ara Ake, the National New Energy Development Centre, which is based in<br>Taranaki.<br>We support recommendations to promote native forestry to prevent over-reliance on plantation forestry and to mitigate<br>job losses. We are supportive of any recommendations to extend grant schemes such as One Billion Trees or to create<br>ecosystem services payments. We would like further clarity on how this could be enabled and aligned and encourage the<br>proposed Equitable Transition Strategy to address this.   |
| We support furth<br>of a comprehens  |      | We support further investigation into the specific impacts of the climate transition on small businesses, and development of a comprehensive plan to support them through the transition.   |
|  |      | We agree that the Government's current standards and funding programmes for insulation and efficient heating need to be improved and scaled up.   |
|  |      | We advocate for best-practice, nationally standardised guidelines and prioritisation criteria to be developed for local government and businesses so that they can consistently factor co-benefits into climate policy, planning and investment decisions, across all their activities.   |
| <ul> <li>Transport</li> <li>14. Do you support the package of recommendations and actions for the transport sector? Is there anything we should change, and why?</li> </ul>                                  | 110  | We support timebound targets being set for increasing low emissions public and shared transport and walking and cycling.<br>However, we note that the majority of the transport recommendations are focussed on urbanised areas, and we are<br>concerned that there is not more reference to rural regional areas. South Taranaki is a predominantly rural region with<br>several smaller urban areas dispersed over a large geographic area. Our communities' mobility and connectivity are heavily<br>road and vehicle dependent. Decarbonising our transport networks will be much more difficult than in urbanised areas,<br>and we will need significant government funding, support, and new types of transport infrastructure to be able to achieve<br>this. We support the recommendation to significantly increase the share of central government funding available for these<br>types of transport investment, and link this funding directly with outcomes that achieve our emissions budgets.  |

| CONSULTATION QUESTION                    | PAGE | OUR VIEWS AND RESPONSES  |  |  |  |
|--|------|--|--|--|--|
| Continued                                |      | We support the reduction of public transport fares for targeted groups, and believe that this should be based on       |  |  |  |
| Transport                                |      | income, age and mobility needs of users.   |  |  |  |
|  |      |  |  |  |  |
|  |      | We support the introduction of incentives that will help vulnerable or rural communities to have access to EV's, so    |  |  |  |
|  |      | that this approach can be affordable and realistic for those communities.  |  |  |  |
| Heat, industry and power sectors         | 118  | We support targeting 60% nationwide renewable energy no later than 2035 and support the development of a long-         |  |  |  |
| <b>15.</b> Do you support the package of |      | term national energy strategy to deliver on this.  |  |  |  |
| recommendations and actions for          |      |  |  |  |  |
| the heat, industry and power             |      | We support enabling more independent generation and distributed generation, especially for remote rural and            |  |  |  |
| sectors? Is there anything we            |      | Māori communities.   |  |  |  |
| should change, and why?                  |      |  |  |  |  |
|  |      | We would like to see additional recommendations for incentivising local government to transition their facilities and  |  |  |  |
|  |      | assets away from fossil fuels to renewable energy sources – although this is an aspirational goal of STDC, the cost of |  |  |  |
|  |      | implementing this is a significant barrier to us.  |  |  |  |
|  |      | We connect recover that would improve an every officiance standards for all buildings, new and evicting stack          |  |  |  |
|  |      | through measures like improving insulation requirements. These standards chould be based on internationally            |  |  |  |
|  |      | accredited building sustainability criteria e.g. HomeStar  |  |  |  |
|  |      | accreated building sustainability criteria e.g. nomestar.  |  |  |  |
|  |      | We support expanding assistance for all households to improve the energy efficiency of their housing, based on         |  |  |  |
|  |      | means assessments  |  |  |  |
|  |      |  |  |  |  |
|  |      | We support introducing mandatory measures to improve the operational energy performance of commercial and              |  |  |  |
|  |      | public buildings, and support this being incentivised for small businesses.  |  |  |  |
|  |      |  |  |  |  |
|  |      | However, we are concerned at the large relative impact on the Taranaki economy from the proposed scenario.             |  |  |  |
|  |      | Reduced oil and gas, Methanex closure, reduced farming activity, reduced thermal electricity generation, reduced       |  |  |  |
|  |      | plantation forestry and impacts on rural communities are all significant negatives for Taranaki.                       |  |  |  |
|  |      |  |  |  |  |
|  |      | Although there are numerous transition plans and pathways for Taranaki, none of these have yet to be implemented,      |  |  |  |
|  |      | and the real-world feasibility and cost of implementing them is unknown.   |  |  |  |

| CONSULTATION QUESTION   | PAGE | OUR VIEWS AND RESPONSES   |  |  |  |
|---|------|---|--|--|--|
| <ul> <li>Agriculture</li> <li>16. Do you support the package of recommendations and actions for the agriculture sector? Is there anything we should change, and why?</li> </ul> | 121  | In general, we support the package of advice around ensuring the agriculture sector can reduce biogenic agricultural emissions through on-farm efficiency and technologies. Decarbonising our agricultural sector will be a key concern for NZ's competitive advantage in future carbon-concerned international export markets.<br>However, we have concerns that the advice appears to almost wholly omit reference to rural and small-town New Zealanders, who make up many of our communities in South Taranaki.<br>The proposed reductions in farming and plantation forestry is likely to have greater relative impacts on the rural population than on urban populations, and our farming communities need to be provided with comprehensive support, training, and real-world initiatives to enable them to successfully transition to low carbon farming methodologies.   |  |  |  |
| _   |      | "necessary action" in the package of advice.  |  |  |  |
| <ul> <li>Forestry</li> <li>17. Do you support the package of recommendations and actions for the forestry sector? Is there anything we should change, and why?</li> </ul>       | 124  | We support the large-scale planting and management of long-term native forests as permanent carbon sinks.<br>We submit that managing and restoring other biological/ecological carbon sinks should also be prioritised, and<br>brought into the ETS, such as wetlands, peatlands, estuaries, saltmarshes, naturally regenerating forests etc.   |  |  |  |
| Waste   | 126  | We support the package of measures for the waste sector, and the circular economy approach. We believe that these   |  |  |  |
| 18. Do you support the package of<br>recommendations and actions for<br>the waste sector? Is there<br>anything we should change, and<br>why?                                    |      | measures will also have large knock-on positive impacts for improving many of our other environmental problems.<br>However, we advocate that the recommendations specifically address how local government can be better<br>supported to fund and develop large-scale waste management infrastructure to support waste diversion, reuse of<br>resources, use of biofuels and minimisation of waste across the spectrum.<br>Without additional funding, smaller councils like STDC will struggle to voluntarily implement organic and<br>compostable waste reduction schemes due to the high costs of capital and operating expenditure for these projects.<br>Again, it appears that rural waste streams have not been considered in the advice package, which is a large gap that<br>needs to be addressed. Industrial and construction waste, and embodied carbon in buildings, also do not appear to<br>have been accounted for. In South Taranaki, industrial, construction and agricultural waste are an order of magnitude<br>greater than residential waste, are not controlled by STDC, and need to be accounted for.<br>Therefore, we advocate for strategies and legislation that are not solely focussed on household waste, and which<br>incentivise diversion from landfill for industrial, construction and agricultural waste streams also, as well as for<br>reducing embodied carbon from construction, rather than solely focusing on existing buildings' efficiency. |  |  |  |

| CONSULTATION QUESTION  | PAGE | OUR VIEWS AND RESPONSES   |  |  |  |
|--|------|---|--|--|--|
| <ul> <li>Multisector strategy</li> <li>19. Do you support the package of recommendations and actions to create a multisector strategy? Is there anything we should change, and why?</li> </ul> | 134  | We support these recommendations, but advocate for stronger directives and consistent guidelines of financial risk disclosure would look like for local government.<br>We advocate for bringing in long term carbon unit prices into our investment, procurement and policy decisive emphasise that clear standards and support for capability building are needed for local governmentingfully participate, as doing this is resource intensive. |  |  |  |
| <ul> <li>Rules for measuring progress</li> <li>20. Do you agree with Budget<br/>recommendation 5? Is there<br/>anything we should change, any<br/>why?</li> </ul>                              | 145  | We support these recommendations and recommend the development of methods for tracking emissions and targe accounting to include removals by non-forest biological removals e.g. peatlands, wetlands, and marine sinks.   |  |  |  |
| <ul> <li>Nationally Determined Contribution<br/>(NDC)</li> <li>21. Do you support our assessment of<br/>the country's NDC? Do you<br/>support our NDC<br/>recommendation?</li> </ul>           | 154  | We support these recommendations.   |  |  |  |
| <ul><li>Form of the NDC</li><li>22. Do you support our recommendations on the form of the NDC?</li></ul>   | 163  | We support these recommendations.   |  |  |  |
| <ul> <li>Reporting on and meeting the NDC</li> <li>23. Do you support our recommendations on reporting on and meeting the NDC? Is there anything we should change, and why?</li> </ul>         | 166  | We support these recommendations.   |  |  |  |
| <ul><li>Biogenic methane</li><li>24. Do you support our assessment of<br/>the possible required reductions<br/>in biogenic methane emissions?</li></ul>  | 180  | We support these recommendations.   |  |  |  |

#### **Response ID ANON-NZPP-DRYS-A**

Submitted to Climate action for Aotearoa Submitted on 2021-03-28 18:22:51

#### Introduction

What is your name? What is your organisation (if applicable)?

Name (enter in text box): New Plymouth District Council

What is your email address?

Email (write into text box):

In what capacity are you responding to this survey?

In what capacity are you responding to this survey? Select from the dropdown list.: Public sector

Add other/more than one capacity if applicable:

(Optional) Specify iwi/hap affiliation, or if a mandated representative specify iwi/hap /pan-iwi organisation, Mori-collective\* or Mori organisation you represent.:

What part of Aotearoa are you from?

What part of Aotearoa are you from? Select from the dropdown list).: Taranaki

Please specify if you are from outside Aotearoa:

What is your age group?

Confidentiality and disclosure

Yes

#### How this consultation works

Do you want to continue with the consultation questions or do you want to submit a pre-prepared response?

I want to continue with the consultation questions

File upload: No file uploaded

#### Are you here to tell us your one big thing?

Your one big thing:

#### Your one big thing::

New Plymouth District Council (NPDC) acknowledges the effort undertaken by He Pou a Rangi Climate Change Commission (CCC) in compiling its draft advice to Government, and is pleased to submit the following feedback.

Taranaki has 117,561 residents, 80,679 of who live within the New Plymouth District. While we are district-focused in our submission, we do include a regional perspective in some of our consultation question responses.

#### **Climate Action**

NPDC agrees urgent action is required by Government to ensure Aotearoa reaches net zero carbon emissions by 2050, as well as to do its part in achieving the Paris Agreement target of limiting warming to 1.5°C above pre-industrial levels.

NPDC notes the opportunity for renewable energy technologies considered for Aotearoa to be commercialised within Ara Ake. The region has been having transition discussions since 2018, and is ready to pilot, support and lead on transition technology for the country.

Although generally supportive of the pathways identified, NPDC is concerned the transition paths outlined in the draft advice have the potential to significantly impact Taranaki disproportionately more than most of the rest of the county, given our particular economic reliance on the energy sector representing 28% of the regional output and our largest industries being agriculture, forestry and fishing – with around 4,020 business units. Key areas of concern are outlined below:

#### Economic Impact Modelling

NPDC is concerned that the CCC's draft advice presents only macro level economic impacts of the proposed changes. However, there will be significant variations to the impacts of the transition across the country. For example, the proposed carbon accounting methodology will make Taranaki account for all emissions from natural gas consumption for the whole of the country. The Taranaki economy is heavily underpinned by dairy, oil & gas and forestry compared to other regions. This reflects through into employment statistics and the numbers of people working in these sectors as well as average household incomes. The macro level analysis undertaken by the CCC does not adequately account for the disproportionate allocation of job losses that will fall within the Taranaki Region. NPDC is concerned that the numbers of job losses forecast appear to be overly optimistic and underrepresent the true I kely scale. Furthermore, the impact that the lower paying job gains will have on average household incomes and the consequential value-chain flow on effects to the wider economy have not adequately been assessed.

There are a number of assumptions and conclusions the CCC draws from its economic modelling that are of concern because they appear to be underestimating the I kely impact. These include the 1% impact on national GDP and the scale of forecast job losses. Without seeing the underlying economic analysis in full, it is difficult for NPDC to have confidence in these assumptions.

NPDC is also concerned that the loss of fuel excise duty revenue has not been adequately accounted for. The NPDC is already concerned at the extensive delays to Waka Kotahi's (NZTAs) implementation of key safety projects within the region, such as the Waitara to Bell Block project. The impacts of COVID-19 have already greatly reduced the Transport Agency's funding and threatened the delivery of these projects and further loss of funding could see the already high death toll on the New Plymouth State Highway network continue for years to come.

The NPDC submits that the CCC's full economic modelling is publically and openly shared and that the CCC engages in a further period of consultation with local and regional governments, in the spirit of their enabling recommendation 4 (Central and Local Government working in partnership). This will ensure that regional economic impacts are well understood, plans and mitigations put in place and the transition is delivered in line with He Pou a Rangi's principle that it is achieved in an equitable and inclusive way and is comprehensively planned, funded and supported by Central Government.

The CCC's draft advice notes on page 96 that Taranaki has already started strategic transition planning. It is imperative this transition planning now be supported and funded in its implementation. This needs to be led by Government to signal transition programs of work are viable, and have begun.

#### Regional Covid-19 impacts

As well as facing the significant impacts of the transition, the region has been impacted by Covid-19, with the number of people on Jobseeker support upparators the region, including a 53% increase in the New Plymouth district. This excludes those on the COVID-19 Income Relief Payment.

Taranaki has also seen an increase in NEET (Not in Education, Employment or Training) to 16.3% in 2020 – well above the national average of 12.4%. Coupled with Covid-19 impacts, housing prices have increased by 9.6% in New Plymouth.

Taranaki has a higher than average percentage of MII ori who live in the region (17.4% compared with 15% nationally). NPDC are supportive of the CCC's advice to fund MII ori participation in the climate change response. Not everyone in Taranaki enjoys the same level of parity, and we are concerned that those that can least afford it will be impacted the most. So it is essential that the transition planning must include opportunities to raise parity levels and provide inclusive growth – particularly for MII ori.

In combination these factors mean that the Taranaki economy is already being stressed. NPDC submits that the CCC take into consideration the factors listed above and encourage the Government to facilitate an equitable and inclusive transition for the region.

#### Rural Community Impacts Needs More Emphasis

Rural communities are an overlooked vulnerable group due to their relatively small scale. This creates communal afforability challenges as well as risks relating to re-deploying workers in communities with limited employment opportunities. Rural communities also face greater barriers regarding the update of EV vehicles and decarbonising their transportation due to limiting public transport options, the impracticalities of active modes of transport and the limited range of EV to travel long distances on rural road networks.

The proposed reductions in farming and plantation forestry is likely to have greater relative impacts on the rural population than on urban populations, and our farming communities need to be provided with comprehensive support, training, and real-world initiatives to enable them to successfully transition to low carbon farming methodologies. Support to farmers and rural communities is especially critical given the already high levels of suicide amongst farmers. Engaging with and providing for rural communities to help them transition to a decarbonised economy should be a "necessary action" in the package of advice.

#### Local and Central Government alignment

NPDC supports the recommendation for central and local government to work closely on climate change, and submit the Government consider how to address funding, resourcing and training for local government staff to support and implement the transition. Funding streams need to be clarified to ensure local government can carry out the necessary work within the required timeframes.

NPDC also recommends the CCC takes into consideration the Local Government Act 2002's Long Term Planning requirements for Councils. Allowing elected decision makers ample time to consider the projects and shifts needed to transition to a low emissions economy requires alignment with planning and funding cycles.

NPDC has been actively reducing its emissions since 2006 and, as a result, our emissions from electricity, gas and vehicle fuel consumption are now significantly

below our 2006 levels. Furthermore, in 2019 NPDC adopted a Climate Action Framework that focused on both Adaptation and Mitigation.

We acknowledge and welcome the opportunity to strengthen the relationship with central Government through the upcoming review and reform of key legislature that will reinforce settings in ways which will enable councils to accelerate the transition.

#### Do you want to continue with the consultation questions or would you like to end your submission here?

I want to continue with the consultation questions

#### Our six big issues - intro

#### Our six big issues - the pace of change

#### 1 Do you agree that the emissions budgets we have proposed would put Aotearoa on course to meet the 2050 emissions targets?

Do not know

#### Please explain your answer (1000 word limit):

NPDC submission relates to the 24 consultation questions within the draft advice, and we have not submitted on this question.

#### Our six big issues - future generations

2 Do you agree we have struck a fair balance between requiring the current generation to take action, and leaving future generations to do more work to meet the 2050 target and beyond?

I don't know

#### Please explain your answer (1000 word limit):

NPDC submission relates to the 24 consultation questions within the draft advice, and we have not submitted on this question.

#### Our six big issues - our contribution

#### 3 Do you agree with the changes we have suggested to make the NDC compatible with the 1.5°C goal?

Do not know

#### Please explain your answer (1000 word limit):

NPDC submission relates to the 24 consultation questions within the draft advice, and we have not submitted on this question.

#### Our six big issues - role and type of forests

## 4 Do you agree with our approach to meet the 2050 target that prioritises growing new native forests to provide a long-term store of carbon?

#### I don't know

#### Please explain your answer (1000 word limit):

NPDC submission relates to the 24 consultation questions within the draft advice, and we have not submitted on this question.

#### Our six big issues - policy priorities to reduce emissions

#### 5 What are the most urgent policy interventions needed to help meet our emissions budgets? (Select all that apply)

None of them

#### Please explain your answer (1000 word limit):

NPDC submission relates to the 24 consultation questions within the draft advice, and we have not submitted on this question.

#### Our six big issues - technology and behaviour change

6 Do you think our proposed emissions budgets and path to 2035 are both ambitious and achievable considering the potential for future behaviour and technology changes in the next 15 years?

#### Please explain your answer (1000 word limit):

NPDC submission relates to the 24 consultation questions within the draft advice, and we have not submitted on this question.

#### Would you like to end your submission here, or move on to the detailed section of our consultation?

I want to continue with the consultation questions

#### Detailed questions on our advice

#### 1. How we developed our advice

#### 1 Do you support the principles we have used to guide our analysis?

Partially support

#### Please explain your answer (400 word limit):

NPDC are generally supportive of the 7 principles.

However, we would like to submit for consideration that the principles be expanded to ensure the following aspects are included and/or strengthened:

Supporting the development of carbon sequestering economy. Create options while growing and retaining skills – for example Taranaki has a highly skilled workforce, and while Principle 5 acknowledges the transition should be equitable and inclusive, the retention of the skilled workforce is critical to an equitable transition and ongoing economic success for the region.

Creating certainty for businesses and supporting strong business confidence to unlock and stimulate private sector investment.

#### 2. Emissions budgets numbers

#### 2 Do you support budget recommendation 1? Is there anything we should change and why?

Q2 Emission budget levels - Emissions budget 1 (2022 - 2025):

Q2 Emission budget levels - Emissions budget 2 (2026-2030):

Q2 Emission budget levels - Emissions budget 3 (2031-2035):

#### Please explain your answer (1000 word limit):

NPDC supports the emissions budget recommendations.

However, it is noted that may Local Authorities such as NPDC have made climate change declarations. NPDC declared Climate Urgency in December 2019. This local urgency is based on growing scientific evidence that climate change is accelerating, and that the world is on track for climate change impacts between RCP 4 and RCP8.5. If this is the case, we query whether the Commission's advice goes far enough to ensure that Central Government provides the tools and processes to adequately lower emissions in line with local expectations.

#### 3. Breakdown of emissions budgets

3 Do you support our proposed break down of emissions budgets between gross long-lived gases, biogenic methane and carbon removals from forestry? Is there anything we should change, and why?

Q3 - Gross long-lived gases:

- Q3 Biogenic methane:
- Q3 Forestry:

#### Please explain your answer (1000 word limit):

NPDC supports the emissions budget recommendations.

However, it is noted that may Local Authorities such as NPDC have made climate change declarations. NPDC declared Climate Urgency in December 2019. This local urgency is based on growing scientific evidence that climate change is accelerating, and that the world is on track for climate change impacts between RCP 4 and RCP8.5. If this is the case, we query whether the Commission's advice goes far enough to ensure that Central Government provides the tools and processes to adequately lower emissions in line with local expectations.

#### 4. Limit on offshore mitigation for emissions budgets and circumstances justifying its use

#### 4 Do you support budget recommendation 4? Is there anything we should change, and why?

#### Please explain your answer (1000 word limit):

NPDC support this recommendation as emissions need to be reduced to ensure the burden of climate change is not passed on to future generations by using offshore mitigations while continuing to emit at current levels.

#### Enabling an enduring climate transition - intro

#### 5. Cross-party support for emissions budget

### 5 Do you support enabling recommendation 1 on cross-party support for emissions budgets? Is there anything we should change and why?

Fully support

#### Please explain your answer (1000 word limit):

NPDC support this recommendation as it is important that Climate Change policy continues to be delivered with cross party support in order to achieve long term impact.

#### 6. Coordinate efforts to address climate change across Government

### 6 Do you support enabling recommendation 6 on coordinating efforts to address climate change across Government? Is there anything we should change and why?

Fully support

#### Please explain your answer (1000 word limit):

NPDC supports consolidating efforts to address climate change effectiveness and efficiency across Government, and suggests the need for more explicit emphasis on reviewing and transforming existing work programs across government agencies to achieve the zero-carbon objectives and recommendations in this draft advice.

A whole of government approach is crucial to New Zealand making progress in this area. NPDC support the Vote Climate Change proposal, and submit that a portion of the funding be earmarked for local government to carry out climate related work.

#### 7. Genuine, active and enduring partnership with iwi/M∎ori

### 7 Do you support enabling recommendation 3 on creating a genuine, active and enduring partnership with iwi/M**B**ori? Is there anything we should change and why?

#### Partially support

#### Please explain your answer (1000 word limit):

NPDC supports this recommendation, and acknowledges it is critical for councils to work with Iwi/M**I**ori to bring Te Ao M**I**ori and Tikanga M**I**ori into our future adaptation and mitigation activities. However, this is resource intensive for both partners.

Therefore, we seek the inclusion within Recommendation 3 that funding and resourcing is made available to both Local Government and Iwi/M**I**ori for engagement, planning, decision making and implementation.

We would also like to see a recommendation on development of guidance or best practice examples for local government and lwi/M ori partnership processes for response to climate change.

#### 8. Central and local government working in partnership

## 8 Do you support enabling recommendation 4 on central and local government working in partnership? Is there anything we should change and why?

#### Fully support

#### Please explain your answer (1000 word limit):

NPDC support this recommendation, and agree that existing policy and legislative instruments such as the Resource Management Act, Climate Change Response (Zero Carbon) Act, Local Government Act, Land Transport Act, Civil Defence Emergency Act, Building Act, Soil Conservation and Rivers Control Act are aligned to allow both Central and Local Government to make effective decisions around climate change mitigation and adaptation.

Further, emerging instruments that may be useful in both the mitigation and adaptation space include the Local Government Official Information and Meetings Act

(LIMs requirements may be amended to clarify climate change-induced natural hazards to property owners etc.), National Policy Statement on Urban Development, National Policy Statement on Indigenous Biodiversity, Flood protection (2019 Cabinet Paper), and Resource Management legislative review.

NPDC also recommend the CCC takes into consideration the Local Government Act 2002's Long Term Planning requirements for Councils. Allowing elected decision makers ample time to consider the projects and shifts needed to transition to a low emissions economy requires alignment with planning and funding cycles.

Many of the recommendations to achieve emissions reductions in the draft advice rely on local government to drive behaviour change and private emissions reductions (e.g. transport, waste, land-use, urban form etc.). Roles and responsibilities for tracking climate change work plans at a district, regional and national level needs further clarification, as well as how alignment will be implemented and assessed at a consent and monitoring level.

NPDC submits that the Local Government Act needs to be amended to include legislative powers to drive behaviour change and private emissions reductions by local government.

Mentioned at the beginning of our feedback was the recognition of the complexities around transitioning Taranaki's unique economy and demographics to low emissions. In many cases, there will be new areas of work for Council to undertake with the transition.

However, there is limited resourcing and staff capacity and capability at local government level for these new areas of work. NPDC submit the Government's Emission Reduction Plan to consider how to address funding, resourcing and training for local government staff and for communities in implementing the transition. Funding streams need to be clarified to ensure local government can carry out the necessary work within the required timeframes.

NPDC also submit funding mechanisms should be made available to support Council to reduce their own emissions, and this funding should be enduring and sustainable, allowing Councils to lower emissions in time with 2050 targets, faster than the current Long Term Plan cycles and limited funding streams allow.

#### 9. Ensuring inclusive and effective consultation, engagement and public participation

### 9 Do you support enabling recommendation 5 on establishing processes for incorporating the views of all New Zealanders? Is there anything we should change and why?

Partially support

#### Please explain your answer (1000 word limit):

NPDC support this recommendation and agree that comprehensive representation of all New Zealanders is needed to allow the public to participate in Aotearoa's climate response. NPDC submit the proposal needs to include a funding mechanism, for a broad representation of the community to participate.

Community forums require, by design, comprehensive representation from 'all walks of life' to be part of the process, and if many people are counted out because they cannot afford to participate, this undermines the principle of having a representative forum. Involvement from a capacity perspective is a particular issue for Iwi/Millori, who are already overwhelmed with requests for involvement in public policy development. Consideration needs to be given on how iwi/Millori will be supported to participate.

#### 10-11. Locking in net zero

### 10 Do you support our approach to focus on decarbonising sources of long-lived gas emissions where possible? Is there anything we should change and why?

#### Partially support

#### Please explain your answer (400 word limit):

10. NPDC is supportive of prioritising the decarbonisation of long-lived gases. However, careful planning and consideration needs to be applied in the decarbonisation of long-lived gases within the energy sector. Destabilising Aotearoa's energy supply through a rushed transition could have significant impacts on both the environment and people.

### 11 Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change and why?

#### Partially support

#### Please explain your answer (400 word limit):

11. Increasing the focus on planting native forests and balancing native forests with non-invasive plantation forestry. NPDC would like to see funding for local government to lead this work, in collaboration with Iwi/MI ori and our local communities.

This approach will have many localised benefits for wider environmental values, including native biodiversity and taonga, improving water quality, reducing soil erosion, and improving nutrient cycling and regulation. Indigenous forests are a far greater long-term carbon store than mono-culture plantation forests and provide greater habitat complexity and food availability for all species, as well as providing opportunities for rongoa and kai.

NPDC currently has in the draft Long Term Plan, a Planting our Place project to plant 34 hectares of Council-owned land, allowing us to be the first city in Aotearoa to reach the 10% urban cover biodiversity goal. Part of the Planting our Place project has been to work with local hap to support their tree planting

initiative, as well as with a local community group to help create a community garden. There is also a project to fund community groups to support planting efforts on non-Council owned land.

#### 12. Our path to 2035

#### 12 Do you support the overall path that we have proposed to meet the first three budgets? Is there anything we should change and why?

Partially support

#### Please explain your answer (1000 word limit):

NPDC agrees Aotearoa should be working on decarbonising the economy and planting native forests to offset hard to abate emissions.

In order for the economy to be decarbonised and achieve net zero carbon, support from the right levers must be present to enable transformation. Regulations are effective levers of change. NPDC submit changes to regulations are required to allow for the suggested build of alternative modes of electricity generation, including regulations to enable offshore wind generation.

In the 'transitions needed' section, NPDC submit more consideration be given to ridesharing and other innovative options, particularly for rural communities where EV uptake may not be immediately feasible.

More weight should be given to the importance of behaviour change, and the resourcing to support this, rather than the over reliance on EVs. NPDC advocates for funding for local government to provide comprehensive place-based planning and support of the process of behaviour change for transportation.

However, as submitted in the first section to this feedback, the New Plymouth district, which NPDC serves and Taranaki will be disproportionately impacted by the transition.

We reiterate the urgent need for targeted regional and local funding models to be put in place to enable local government to respond as appropriate.

#### 13. An equitable, inclusive and well-planned climate transition

## 13 Do you support the package of recommendations and actions we have proposed above to ensure an equitable, inclusive and well-planned climate transition, and is there anything we should change?

Support some of the actions

#### Please explain your answer (1000 word limit):

NPDC supports an equitable, inclusive and well-planned transition, but urges the CCC to strengthen the commitment needed from Government to help significantly impacted regions and districts transition to a low emissions economy in an equitable, inclusive and well-planned way.

NPDC considers it should be identified as a key community particularly impacted by the transition to a low carbon society. To date, Government has assisted Taranaki through the development of the Taranaki 2050 Roadmap, which has identified multiple funding opportunities to start the transition. The transition in Taranaki is at a critical point – the planning has been completed and upfront investment by Government to help give confidence to private business to also invest in the transition, is urgently needed.

The estimation of 600-1,700 total job losses in the energy sector appears under represented, given the scale of the oil and gas industry in Taranaki. NPDC would like to see further analysis on the impact of employment and business in the energy sector through the transition. Also acknowledged in the advice is that the jobs that will be lost will be highly skilled, high-paying jobs. The transition in the energy sector needs to include retaining skilled workers and allowing them to live in the regions/districts they currently live by providing highly-skilled, well-paying jobs in the low emissions sector.

As previously mentioned, Taranaki already experiences differing levels of parity across the region. Careful planning must consider ways for inclusive growth to ensure parity levels are lifted as we transition, and that further inequities do not occur as a result.

NPDC submits that the transition process needs both funding and resourcing. Creating new systems and structures, and the process of change itself needs to be an integral part of planning to ensure an equitable and inclusive transition. As well as work/job transitions, resourcing and funding needs to be provided to ensure the inclusion of comprehensive planning around the process of change.

NPDC submits that included in educational training for the transition needs to be skills to deal with a changing climate and transition – first aid skills in the event of adverse weather events, or resilience training to deal with job transitions, etc.

NPDC advocates for funding models for local government to help support the transition, as well as funding models directly to education providers, community organisations and lwi and Hap.

#### The direction of policy

#### 14. Transport

14 Do you support the package of recommendations and actions for the transport sector? Is there anything we should change and why?

#### Support some of the actions

#### Please explain your answer (1000 word limit):

NPDC support time bound targets being set for increasing low emissions public and shared transport and walking and cycling, but are concerned the advice does not extend to more rural, regional areas.

New Plymouth city is the main urban area in Taranaki, which is otherwise predominantly rural with several smaller urban rural service towns dispersed over a large geographic area. New Plymouth has developed as traditional provincial city reliant on cars. It now has a strong active transport focus and is working to consolidate its future urban growth through its Proposed District Plan policies.

Despite this our communities' mobility and connectivity are heavily road and vehicle dependent. There are currently few alternative transport options available. We have a very low level of public transport options when compared with more urbanised districts or regions, with low patronage and limited EV infrastructure.

Decarbonising our rural transport networks will be much more difficult than in urbanised areas, and we will need significant government support, and new types of transport infrastructure and public transport services to be able to achieve this.

NPDC support the recommendation to significantly increase the share of government funding available for transport investment.

We submit that Central Government should commit to investigating the benefits of increasing the subsidisation of public transport, particularly where there is an economic and financial business case to invest in high frequency, quality commuter public transport instead of investing to expand and widen the existing roading infrastructure.

NPDC support Councils increasing on-demand and shared vehicle and b ke services, park and ride solutions and micro-mobility options. These services will need funding support to be successful. NPDC urge the CCC to include small rural towns, with limited users into this type of planning to allow all New Zealanders to participate in the transport transition.

NPDC has a flex ble working policy that includes work-from-home for staff. We would like to see the inclusion of community 'hubs' where people can co-work in their local community to ensure social connectivity and interaction is still a major part of peoples working lives. NPDC notes the risk of not including community 'hub' type facilities for co-working will I kely result in severance of parts of our community, with adverse mental and social wellbeing outcomes.

We support the incentivisation of EV uptake, to ensure cost barriers to consumers are removed, and agree this is needed to mitigate impacts for low-income households and people with disabilities, regional and remote access, and with limited access to electricity. We support the introduction of incentives that will help vulnerable or rural communities to have access to EVs.

NPDC submit investment in a rapid charging infrastructure plan for EVs is essential if rapid uptake of EVs is to be successfully integrated into our communities.

We support the recommendation for decarbonising heavy transport. However, the options available must be put in the context of our international vehicle supply chain. New Zealand imports a significant proportion of its vehicle fleet from countries I ke Japan that have an emerging hydrogen economy. If Japanese vehicle manufacturers are skipping past the production of battery EVs in favour of hydrogen fuel cell technology then our transition plans for decarbonising the transport sector needs to account for this.

#### 15. Heat, industry and power

15 Do you support the package of recommendations and actions for the heat, industry and power sectors? Is there anything we should change and why?

#### Support some of the actions

#### Please explain your answer (1000 word limit):

NPDC has concerns that prohibiting new gas connections from 2026 will limit the support and investment by these network operators into transitional technologies like hydrogen and bio-methane. These transition fuels could assist with a greater early decarbonisation compared to simple stopping new connections whilst the existing body of connections are allowed to continue to operate on natural gas. This would also retain the residual value of the long-life infrastructure assets that New Zealand has already invested in for these networks.

Furthermore, the Commission outlines an assumption that electricity prices will not increase, but this is based on undisclosed modelling, assumption and major contingencies, and we are uncertain whether capital and network investment costs and charges have been considered.

NPDC would like to see further engagement with the energy industry, particularly regarding the feasibility and costs of upgrading the capacity of electricity networks to meet the forecast demand, particularly with regard to the daily peak demand and not just the average daily demand.

#### Notwithstanding the above concerns:

NPDC support the development of a long-term national energy strategy to deliver a 60% nationwide renewable energy target by 2035, however, included within this strategy needs to be a clearly articulated plan on how to meet the energy trilemma: affordability and access, energy security (especially given the dry year challenge) and environmental sustainability.

We support enabling more independent and distr buted generation, especially for remote rural and Meori communities, and agree that ensuring access to capital

for this purpose is essential, so that electricity remains affordable and accessible for all.

NPDC support measures that would improve energy efficiency standards for all buildings, new and existing stock, through measures like improving insulation requirements. We submit the necessary action be extended to include construction waste and lifecycle/end of life waste from buildings.

NPDC support expanding assistance for all households to improve the energy efficiency of their housing, based on means assessments.

NPDC reiterate our concern at the large relative impact on the Taranaki economy from the proposed scenarios'. Reduced oil and gas, Methanex closure, reduced farming activity, reduced thermal electricity generation, reduced plantation forestry and impacts on rural communities are all significant impacts for Taranaki.

Transition plans for Taranaki need to be implemented with urgency, and government funding is required for this. NPDC submits a funding package for the region that allows the implementation of the Taranaki 2050 Roadmap Transition Pathway Action Plans, is required in the upcoming national budget.

#### 16. Agriculture

#### 16 Do you support the package of recommendations and actions for the agriculture sector, and is there anything we should change?

Support some of the actions

#### Please explain your answer (1000 word limit):

In general, we support the package of advice around ensuring the agriculture sector can reduce biogenic agricultural emissions through on-farm efficiency and technologies. Decarbonising our agricultural sector will be a key concern for NZ's competitive advantage in future carbon-concerned international export markets.

However, we have concerns that the advice appears to almost wholly omit reference to rural and small-town New Zealanders.

The proposed reductions in farming and plantation forestry is likely to have greater relative impacts on the rural population than on urban populations, and our farming communities need to be provided with comprehensive support, training, and real-world initiatives to enable them to successfully transition to low carbon farming methodologies. Support to farmers and rural communities is especially critical given the already high levels of suicide amongst farmers.

Engaging with and providing for rural communities to help them transition to a decarbonised economy should be a "necessary action" in the package of advice.

#### 17. Forestry

#### 17 Do you support the package of recommendations and actions for the forestry sector? Is there anything we should change and why?

Support some of the actions

#### Please explain your answer (1000 word limit):

We support the large-scale planting and management of long-term native forests as permanent carbon sinks.

We submit that managing and restoring other biological/ecological carbon sinks should also be prioritised, and brought into the ETS, such as wetlands, peatlands, estuaries, saltmarshes, naturally regenerating forests etc.

#### 18. Waste

#### 18 Do you support the package of recommendations and actions for the waste sector? Is there anything we should change and why?

Support some of the actions

#### Please explain your answer (1000 word limit):

NPDC supports the recommendations and would I ke to see alignment of waste and climate change legislation to ensure progress can be made on key outcomes for both waste minimisation and emissions reduction. As such NPDC support the setting of targets in the waste strategy to reduce emissions but that these targets need to be set early to allow for scaled investment planning in the diversion infrastructure and necessary policy changes to reach zero waste/zero emissions goals by 2050. More investment is needed in alternative social infrastructure (such as resource recovery networks including repair hubs, learning centres, swap shops) and technical capital infrastructure (such as composting, recycling processing or construction waste facilities) but these require staged targets to commit to the major capital investments that tend to have 20-year lifecycles. A consumption-based approach should play a key role in setting our emissions budgets and measuring progress. Consumption-based emissions data follows emissions through the lifecycle of products and materials, exposing both embodied emissions generated offshore and the upstream emissions cost of short lived consumer goods.

The Commission's waste reduction target for organic waste to landfill of 23% by 2030 needs to aim higher to get national action on diverting food waste. NPDC concur with the TAO Forum recommendation for increased central government investment in reducing food waste along all parts of the food chain (including household food waste), potential mandated separate collection of organics (dependent on an analysis of regional options) and an eventual phased in ban on organic waste to landfill, rather than directing organic waste to landfills with gas capture.

While we recognise that some parts of the waste sector will advocate for better capture of methane from landfills to be used for energy, NPDC believes the expansion and investment into landfill gas capture (to energy) could have the unintended consequence of incentivising an increase of organics to landfill (gas

capture of legacy material being the exception). To better align with circular principles, the reuse of organics must be focused on soil regeneration, local food production and food security.

In conjunction with any landfill ban of organic materials work needs to be done to ensure there are markets for increased compost, biochar and soil conditioners produced because of diversion, and investment made in composting and AD facilities, as well as support for local councils in implementing the right system for their region.

We support raising the cost of disposal to landfill via the Waste Levy and using this to invest for reducing waste to landfill as well as waste emissions. The most effective way to reduce emissions from production, consumption and waste is to invest the waste disposal levy revenue in systems and infrastructure that target the top of the waste hierarchy in order to prevent and reduce the creation of waste in the first place and grow the reuse economy. To ensure a just transition Government needs to invest a fair share in local, community scale solutions and SME innovators who are driving change as well as funding the expansion of existing waste reduction programmes. Enabling cost effective alternative options to landfill disposal will also reduce the impact of increasing disposal costs on low income communities. Investment in local (NZ) reprocessing facilities (for plastics for example) and creating a demand for recycled material through legislating recycled content in production of new goods can also reduce emissions in the lifecycle of a product.

In addition, a large portion of waste is generated and managed by the private sector (i.e. construction waste landfills, or greenwaste landfills) which are outside of Councils' influence. Any investment of waste disposal levy funds in physical infrastructure needs to be scalable, adaptable to change, and focussed at the top of the waste hierarchy or with the highest emissions reduction potential.

We submit that product stewardship should be included within the package of recommendations. The gains from reducing "embodied carbon" (the emissions produced during manufacture of a material or product) are far greater than the gains from reducing emissions from waste. Therefore we support more priority product declarations that prioritises products with high emissions potential such as textiles, timber (all forms), fibre (paper and cardboard), biosolids and sludge and urges the prioritisation of progressing the current priority product regulated product stewardship schemes.

We support the safe collection and disposal of HFCs in imported finished products through product stewardship schemes and a set timeline to ban imports where alternatives have not been used. The regulated product stewardship scheme for refrigerants and other synthetic greenhouse gasses needs to be urgently implemented and extended.

#### 19. Multi-sector strategy

19 Do you support the package of recommendations and actions to create a multisector strategy, and is there anything we should change?

Support some of the actions

#### Please explain your answer (1000 word limit):

NPDC support the creation of a multisector strategy, and advocates for funding for local government to achieve a comprehensive approach across its disciplines.

NPDC submits that strengthening the behaviour change recommendation to include the role local government will play in implementing these changes at a regional and district level. It is critical that such behavioural change recommendations are backed by legislative powers in the new Natural and Built Environment Act, Strategic Planning Act, Managed Retreat Act and Adaptation Act, in order for Councils to compel action from their communities. Requiring local government to drive change with influence alone, is not sufficient.

As mentioned previously, there are existing funding and resource constraints to carrying out new work in Council, but local government is ideally placed to educate behavioural change in local communities.

We support funding for MII ori emissions profiles, and advocate for these to be partnered with MII ori adaptation planning, to fully allow MII or ito embed MII tauranga MII ori into the climate change response.

NPDC support recommendations around financial risk disclosure, but advocate for the development of strong directives and consistent guidelines for implementation.

Similarly, we support bringing in long-term carbon unit prices into our investment, procurement and policy decisions, but emphasise that clear standards and support for capability building are needed for local government to meaningfully participate.

#### 20. Rules for measuring progress

#### 20 Do you agree with Budget recommendation 5 on the rules for measuring progress? Is there anything we should change any why?

Support some of the actions

#### Please explain your answer:

As Production-based accounting is the standard method used internationally for setting and tracking emisisons reduction targets, and given the listed consumption-based accounting downsides, NPDC supports Budget recommendation 5 – that Aotearoa use the Production-based accounting method to track emissions.

However, NPDC asks the CCC note that in production-based accounting, NZ's entire gas emissions are attributed to Taranaki which will significantly skew the GHG inventory of the region.

NPDC support recommendation C(v) around the development of methods for tracking carbon removals by sinks not yet included in the country's domestic or international accounting. E.g. organic soils, small lots of trees, regenerating vegetation and wetlands.

#### 21-23. Our Nationally Determined Contribution (NDC)

#### 21 Do you support our assessment of the country's NDC? Do you support our NDC recommendation?

#### Do not know

#### Please explain your answer (1000 word limit):

NPDC acknowledges the CCC's first recommendation that New Zealand's first NDC was not compatible with Aotearoa making a contr bution to global efforts under the Paris Agreement to limit warning to 1.5°C above pre-industrial levels.

However, NPDC cannot currently support the second recommendation to make changes to the NDC. This is because there is a lack of information.

NPDC submits that, before Government commits to changing the NDC, further analysis is undertaken to confirm the likely economic and social impacts, risks and credible pathways to achieving any such change.

#### 22 Do you support our recommendations on the form of the NDC?

Support

#### Please explain your answer (400 word limit):

NPDC support the recommendation that any new NDC is on the basis of all GHGs using the IPCC's Fifth Assessment Report and the most recent IPCC global warming potentials adopted by the Parties to the UNFCC.

#### 23 Do you support our recommendations on reporting on and meeting the NDC? Is there anything we should change, and why?

Support

#### Please explain your answer (400 word limit):

NPDC supports the recommendations that:

• The NDC should continue to be met through a combination of domestic emissions reductions, domestic removals and the use of international carbon markets.

• The government should report annually on how it plans to meet the NDC, including the balance of planned domestic emissions reductions, removals and offshore purchasing.

• That the government should clearly communicate its strategy for purchasing offshore mitigation and how it will manage fiscal risk.

#### 24. Eventual reductions in biogenic methane

#### 24 Do you support our assessment of the possible required reductions in biogenic methane emissions?

Fully support our assessment

#### Please explain your answer (1000 word limit):

NPDC support these recommendations but note the required funding and support required to make these changes will be substantial. Farmers will need to be supported through this transition to ensure it is inclusive and equitable.



26 March 2021 Document: 2740402

Climate Change Commission PO Box 24448 Wellington 6142

Attention: Submissions Analysis Team

### Submission on Draft Advice 2021

Taranaki Regional Council ("TRC") thanks the Climate Change Commission ("CCC") for the opportunity to make this submission on the Draft Advice for Consultation ("the Advice").

TRC supports CCC's objectives in preparing the Advice. We recognise the significance of climate change and the need to move away from business as usual to ensure that New Zealand achieves a sustainable low carbon future. We offer the following comments as a contribution to helping to ensure that the Advice and the resulting policy serve New Zealanders' well in achieving the necessary changes and carbon goals.

#### Submission reflects collaboration amongst key Taranaki stakeholders

TRC would like to draw attention to the process behind preparing this Submission.

TRC and the three territorial authorities in the Region meet regularly on a number of matters, including climate change. Those meetings include an officer-level discussion to align the respective councils' submissions.

TRC also engaged with Venture Taranaki (who in turn consults widely with Taranaki industries), Port Taranaki and directly with the eight iwi whose rohe comprise the Taranaki Region.

Our Policy and Planning Committee includes iwi and Federated Farmers representatives, ensuring that views of key partners and stakeholders in our Region's future are considered.

We believe that Taranaki's approach is unique amongst the submissions that CCC will receive for its level of collaboration and alignment amongst the organisations mentioned above. We believe that the result is a strong, consistent and representative view from across the Taranaki community.

Working with people | caring for Taranaki

#### **General comments**

TRC support proactive strategies and tactics that meet our climate goals while supporting communities' environmental, social, economic and cultural well-beings.

TRC further supports the overall  $CO_2$ -e targets. While they are a stretch, they set the tone for the "not-BAU conversation" noted above.

The split gas approach allows for greater specificity and detail in setting both targets and policy options. The treatment of methane as different from carbon dioxide in source, characteristics and reduction options is supported.

TRC also supports the seven principles that have guided the Advice preparation.

However we question whether the "decarbonisation principle" is over-weighted, despite the Advice implying equal weighting for all principles. As we note below, we believe this overweighting negatively impacts the quality and breadth of the Advice. We would therefore submit that the scenarios be re-run with equally weighted principles.

#### Taking a national view means that significant regional impacts are not being considered

The Advice presents only macro level impacts of the proposed changes.

However the reality is that the response strategies will be felt regionally – and that there will be significant variations in those impacts across the country.

By way of illustration, the following table compares Taranaki's emissions, economic activity and employment profiles to the national averages that are the focus of the Advice.

| Emitting       |           | NZ Aver | age        | Taranaki  |     |            |
|----------------|-----------|---------|------------|-----------|-----|------------|
| Sector         | Emissions | GDP     | Employment | Emissions | GDP | Employment |
| Transport      | 36%       | 5%      | 6%         | 2%        | 3%  | 5%         |
| Major Industry | 41%       | 13%     | 10%        | 26%       | 20% | 16%        |
| Agriculture    | 18%       | 4%      | 4%         | 60%       | 9%  | 7%         |

NOTE: Transport emissions include domestic vehicle use, whereas GDP and employment are for the ANZSIC sector only. Sources: Emissions – Climate Change Commission Draft Advice and TRC regional inventory; GDP//Employment – Statistics NZ

TRC is particularly concerned because the proposed scenarios' impact on Taranaki far exceed our relative contribution to New Zealand's total emissions. Reduced oil and gas, Methanex closure, reduced farming activity, reduced thermal electricity generation, reduced plantation forestry and impacts on rural communities are all significant negatives for Taranaki. The region's relatively small and dispersed population also limits communities' response and resourcing options.

Accordingly, TRC submits that the Advice should be reissued giving regional breakdowns of emissions targets and impacts. A further consultation round should be conducted once that detail is available.

#### Collaboration with local government is good - but doesn't go far enough

TRC supports the CCC's comments on the importance of engaging with local authorities to develop local solutions and providing funds and funding mechanisms to let them develop those solutions.

However, we believe that the Advice does not go far enough in supporting that collaboration.

More specifically, TRC submits that policy development and implementation should start with local government developing regional responses to address regional contributions to national emissions. Centralised policy could be used to then make up any shortfalls in aggregated regional contributions against the national targets.

TRC believes that this approach will generate more total reductions, will be more focused and will have greater local buy-in than centrally imposed policies.

The government must also take account of the resource pressure coinciding fresh water, water infrastructure and resource management legislation reforms are placing on local government. These pressures limit local government's effective and meaningful contribution to climate change response. The comments below on the consultation and policy process timing apply equally here.

#### Funding for local government should also include increased research funding

The Advice notes the need for increased local government funding to support the sector implementing the required adaptation and response measures.

However, some of those measures will require pushing beyond current knowledge of processes, baseline states and impacts. Accordingly, research – scientific, social and economic, to name but three areas – will be needed to ensure that councils and their communities are suitably informed when deciding on and implementing those programmes.

Accordingly, TRC recommends expanding the discussion on local government funding to include access to research funds, such as an expanded Envirolink, a re-directed "Deep South" or new, targeted funding.

#### Support for a proposed whole of central government approach

As the Advice correctly notes, a whole of government approach will be needed, covering multiple agencies and departments.

TRC agrees with this approach and would recommend that the Advice should go further.

We believe that CCC should recommend at least investigating interdepartmental executive boards and/or JV's. Stakeholders often cite negative experiences due to being forced to deal with multiple agencies to address or progress issues. The importance of climate change as an issue means that government should do everything possible to address those concerns and to facilitate engagement with those key stakeholders (including local government).

## The focus on supply side and large energy user decarbonisation both ignores key opportunities and limits the effectiveness of potential strategies

As noted above, TRC is concerned that the Advice overly targets energy supply decarbonisation as the principal means of achieving the carbon targets.

This supply side focus means that the Advice largely ignores energy efficiency and behaviour change-led emissions reduction.

Energy efficiency reduces energy related emissions, making targets more achievable. It can also create economic and social co-benefits that could offset some of the calculated negative impacts of the proposed scenarios.

Behaviour change-led improvements are also often more permanent and cheaper to implement than changes imposed by regulations.

Accordingly, demand side solutions deserve more in depth analysis than the brief mention given in the Advice.

Not doing so risks dissociating average New Zealanders from their role in the required changes by painting the issue and solution as belonging to large industry and the energy sector. This "us versus them" separation ignores the reality that energy sector emissions are ultimately only in service of final consumers' energy demands.

Examples of demand side opportunities that TRC believes warrant strong investigation include:

- Reviewing and improving the Building Code as it is well stated that the New Zealand housing stock is unnecessarily energy intensive
- A comprehensive home insulation retrofit programme
- Improving vehicle efficiency standards a move that we note that the Government has announced since the Advice was published
- A robust review of the current MEPS programme including limiting or prohibiting inefficient equipment (e.g. incandescent light bulbs), expanding the programme breadth and reintroducing "Energy Star" type energy labelling
- Providing incentives and support for industrial energy efficiency retrofits (beyond just LTPH) e.g. through tax and accelerated depreciation regimes.

## Provide stronger signals in support of economic measures (including innovation and development)

The Advice is effectively silent on the possible role of market mechanisms and other financial interventions (e.g. tax regimes, investment loans, etc) in achieving or exceeding sector-based contributions to the overall target.

It gives only a cursory mention to market based and economic measures – along with an out of hand dismissal of its own modelling that \$50/unit ETS pricing is an effective means of reaching carbon targets.

While TRC does not support unfettered markets, we believe that this silence is detrimental to the Advice – and ultimately to New Zealand's society and economy.

Importantly, these commercial and economic factors – supported by central and local government policies and partnerships establishing the stage on which commercial actors play- are ultimately the drivers for the innovation and new technologies that will not only take New Zealand to a low carbon future, but can also develop the industries and jobs needed to power the new economy.

However CCC instead favours an approach based on centralised and prescriptive policy. As our comments on the need for regionally focused approaches show, TRC believes that policy centralisation carries with it costs and risks that New Zealand cannot afford to bear.

Failure to promote economic solutions could see New Zealand overlooked as a possible destination for overseas funds and technology partnerships, especially as other governments are being more proactive (e.g. Australia's \$370m Hydrogen Strategy).

While we recognise that there is the potential to include these measures at the policy development stage, we believe that early and clear signals to the private sector as to commercialisation opportunities could accelerate the reduction pathway.

At the very least, we submit that, for each sector, the Advice should identify the tranches of reduction available from those technologies, processes and strategies which are:

- currently commercially available or are being implemented
- viable and, with appropriate support, are feasible near term opportunities (e.g. 3-5 years)
- longer term propositions.

This detail should be accompanied by modelling of the potential impacts of accelerated depreciation regimes, tax relief, investment assistance and other forms of support for businesses and individuals to innovate, develop and even simply adopt transition technologies.

#### Concern that the process is being rushed

TRC appreciates that the Advice is primarily about showing a required direction and distance of travel, rather than the full details of that journey. However, because the Advice will shape policy direction, well considered analysis and submissions are crucial to the process. Expecting that level of consideration of the Advice (and evidence) within six weeks is not consistent with "true consultation" and an "inclusive future".

As the CCC recognises, achieving emissions targets requires social acceptance and community contributions at each step. Rushed consultation potentially undermines that support.

The impact of undue haste can even be seen in the Advice and evidence, where response option discussions lack detail and largely deal in generalities. TRC questions whether this level of detail is appropriate for such a fundamental piece of work.

The path forward after consultation shows a similar undue haste – such that it raises questions as to the Government's true commitment to considering alternatives raised in the consultation.

A further significant factor that CCC seems to overlook is the risk of "consultation fatigue" amongst key stakeholders. TRC is finding that, with the current reform volume, some key stakeholders are unable to give the input that they and TRC both desire. This comment is particularly true for many of our tangata whenua partners in Taranaki.

TRC urges CCC and the government to review their timelines to ensure that they provide meaningful and ongoing opportunities for public engagement to shaping and implementing climate change policies and actions.

## There is a lack of transparency in the models and assumptions used to derive the scenarios

Despite volumes of evidence, numerous workshops and information presentations that are available on CCC's website, finding the detail that underlies the stated scenarios is difficult. Even the evidence content largely simply restates the Advice with little substantive increase in detail. This factor magnifies the negative effects of the tight timelines.

(TRC acknowledge the recent release of more modelling data on the CCC website. However, we respectfully submit that it is too little, too late to allow effective comment and consultation on those models.)

## Scenarios appear to overlook key issues with solution implementation, underplay costs and overlook the scale required for a number of factors

TRC is concerned that, while the Advice acknowledges that there will be costs and issues with implementing the possible transition pathway, the analysis contained in the Advice sometimes lacks the rigour and "real world grounding" needed to assess those impacts.

TRC would cite the following as examples of incomplete or questionable analysis:

- Appearing to ignore the 17% capacity factor for solar electricity and the 40% capacity factor for wind. Applying these capacity factors means electricity system decarbonisation will require increasing current generating capacity by 50% in the next 15 years.
- Even a cursory look at Transpower's grid upgrade history shows that the timing assumptions are optimistic especially where community support is lacking (e.g. the Whakamaru-Brownhill upgrade).
- EV promotion appears to not account for:
  - EV capital cost considerations, including initial affordability, accelerated depreciation relative to ICE vehicles due to shorter effective useful life.

- The limited impacts of overseas incentive schemes. For example, Canada is held up as a success, but nearly 80% of new vehicle sales are "light trucks" and the top 3 light trucks outsell the top 3 EV's by 13:1.
- The limited availability of vehicle types both present and forecast. Especially relevant for non-city dwellers.
- How the loss of petrol levies impacts transportation network funding
- Related to the above, if those taxes are to be rolled into electricity prices, how that will be done. For example, will at-home car charging require separate ICP's and rates? Or will the general electricity price rise? Either option creates additional costs.
- The end of life disposal costs on electric vehicle batteries
- The Advice does not discuss the impact of rolling stock availability/age and gauge on the ability to increase rail use. Electrification costs also appear to be glossed over.
- Sector discussions that are either completely or extensively missing include providing high temperature process heat without using coal or gas, and the electricity pricing impacts for commercial and industrial users.
- While TRC supports the call for increasing the proportion of freight that is moved by coastal shipping, the Advice seems to ignore the current near absolute reliance on international deep-water ships to move freight domestically. This factor and the oft-stated sharp increase in cost that coastal cabotage rules would impose are significant barriers to a carbon zero domestic fleet.
- Commercial property energy use change scenarios appear to ignore how separation of capital costs (owners) and energy costs (tenants) has historically limited improvements in this sector.
- The assumed high level of labour mobility should be questioned in light of "2020 covid period" experience.
- The predicted 600 net job losses seems significantly understated. For example, PEPANZ/Energy Resources Aotearoa and Venture Taranaki have shown that oil and gas has a total employment effect of 11,700 people, 7000 of whom are in Taranaki. If that sector was reduced as modelled, it is optimistic at best to assume that over 95% of those people will be re-employed.
- The Advice glosses over the expectation that gained jobs will pay less than lost jobs in a single sentence which is totally inappropriate given the household income impact.
- The blanket assumption that all export industries must decarbonise should be rigorously tested. For example, our dairying is recognised as some of the lowest carbon intensity globally.
- The switch to use of forestry waste for bioenergy overlooks:
  - Technical issues which seriously inhibit collecting slash and skid waste for biofuel
  - The need for fossil fuels to operate forest equipment including chippers
  - Collection and transportation economics
  - Fuel variability which usually requires supplementary fuel oil in boilers
  - The impact of biomass removal on nutrients (i.e. the need for increased artificial fertiliser) and in-forest biodiversity
  - Using specific fuel crops (or coppicing) is likely to require significant exotic species plantations, which is contrary to the Advice's focus on native forests.

These comments should be taken as expressing concern about the completeness of the analysis, rather than as inherent resistance to the need for any of the changes. This concern is driven by a desire to ensure that bad analysis does not lead to bad policy.

#### Support for use of gas as a transition fuel requires consideration of supply resilience

For the reasons set out in the Advice, TRC endorses the CCC recommendation to retain gas electricity generation for system support and dry year capacity until at least 2035. However there is some concern over the impact of current oil and gas exploration and production policies on supply availability.

A "necessary action" should be added calling for a consequential review of those policies.

#### Failure to consider CCS overlooks a significant near term response strategy

TRC supports CCC's view that New Zealand must work towards achieving ultimate reductions in gross emissions (versus reductions in net emissions). However, as New Zealand will struggle to meet interim reduction targets, any reduction in annual emissions, regardless of source, should be applauded.

To that end, TRC is disappointed that New Zealand's capacity for Carbon Capture and Storage (CCS) gets a cursory, one-sentence mention. The practice is well-established overseas and has been researched in New Zealand. Depleted gas and condensate fields in Taranaki provide a technically feasible option for large-volume CCS using existing infrastructure that would otherwise have to be abandoned at great cost

TRC would therefore submit that the analysis should be reassessed with greater emphasis on CCS as an option.

## The omission of a discussion on soil stocks of carbon and how they relate to NZ's emissions inventory is surprising.

TRC is disappointed that the discussion on carbon accounting and emission reduction methodologies largely ignores land use as a driver of sequestration rates or soil carbon loss.

A large body of published New Zealand-based research found intensive dairying on higher class soils retains more soil carbon than sheep and beef, forestry, urban subdivision/ landscaping, or horticulture. Related research establishes good farm practices for protecting soil carbon stocks.

The findings of this research should be used and the results included in the Advice.

## The systems approach is weakly implemented – and should be extended beyond purely $\rm CO_{2-e}$ based systems

The Advice notes that the CCC advocates a systems approach to scenario development. While TRC supports this approach, our reading of the Advice is that the approach has not been strongly applied.

For example, the discussion on transportation options on page 97 appears to view the different vehicle types as separate entities, rather than taking an overall approach to small

vehicle efficiency. Similarly, the different household energy end uses appear to be discussed separately, rather than taking a "whole of house" approach.

The CCC's strong focus on CO<sub>2-e</sub> reduction as the sole target variable means that it ignores associated environmental consequences of renewable energy generation and GHG emission reduction interventions.

For example, many of the rare earths used in EVs are mined in countries with minimal or non-existent health, safety and environmental controls and protections. Some commentators fear the universal failure of EV battery recycling markets in first-world countries is creating looming environmental and public health issues. The report rightly identifies the need to give effect to the values of He Ara Waiora tikanga. In the light of these values, it is inappropriate for the government to ignore the ethical and environmental externalities of its policies. TRC asks the CCC to highlight these consequences as a "necessary action" for government attention.

Related to the above, the production accounting focus means that we are ignoring the embodied carbon in some of the proposed scenario solutions.

Meeting the reduction targets requires significant imported capital and consumer goods. From a global point of view, the embodied carbon in producing and transporting this equipment is still a significant negative. A production accounting approach allows New Zealand to export – and ignore – this negative impact. It also fails to give effect to a broader understanding of He Ara Waiora values.

It is also worth noting that the EC is currently proposing a consumption accounting based carbon tax. The tax is designed to specifically address the issue of off-shore impacts of local consumption – and to address actions by companies and countries to export their carbon (in particular to LDC's).

The Advice's discussion of extensive electrification's impact on system vulnerability/ resilience is brief and understated. Texas' recent experiences with the failure of electricity systems due to winter storms shows the danger of an under-diversified energy system. Yet the Advice seems to overlook system security; pushing strongly towards full electrification at the expense of back-up systems as diverse as gas for home cooking, diesel generation in hospitals and ICE powered car radios and equipment charging.

The scenarios seem to ignore the lessons of the 1970's oil shocks about concentrating risks about our energy future in focused parts of the globe. Economic, ecological, and political challenges arise whenever we effectively export crucial parts of our energy futures to other countries. In this instance, possible risk comes from over-reliance on China, who control 95% of the world's supply of rare earths, the large majority of components for EVs, turbines and electric motors, plus energy and digital transition technologies.

Accordingly we believe that the analysis should be recast taking a fuller systems approach that accounts for:

- All environmental impacts of energy use and consumption
- A more complete sectoral system analysis

- The embodied carbon effects of solutions (including taking a more consumption accounting approach)
- Energy supply security.

#### Support for an extensive review of the implications for strategic industries

TRC welcomes the discussion on the importance of identifying and maintaining strategic fossil fuel dependent industries such as cement, steel and iron manufacturing.

TRC notes that the considerations for these industries, which lack alternatives to gas and coal, are different to those industries where renewables are an option (including electricity generation). We would restate our comments above about reviewing oil and gas policy as a necessary action. We also support strengthening the Advice's cautions over optimistic reliance upon options such as bio-energy or green hydrogen to displace fossil fuels in these industries.

TRC particularly notes and endorses the CCC's careful analysis of Methanex's role in providing secure baseload natural gas demand that supports exploration and production. The implicit warning within the Advice, that loss of Methanex could impact gas supply, including for electricity generation, should be given greater emphasis.

TRC submits that, as these strategic plants are often part of global corporations, their production should be viewed in terms of its global emissions impacts. Doing so ensures that policy favouring closing an efficient, cleaner producing New Zealand plant (such as Methanex) does not increase global emissions by pushing that production to "dirtier" foreign plants.

#### TRC gives qualified support to the forestry, land management and agriculture proposals

The following is based on TRC's experience working closely with Taranaki farmers on land management programmes since 1989. The comments reflect our experience both in the technical implementation and building community support for programmes.

TRC supports CCC's proposal of integrating trees into the farming landscape which include increasing native afforestation to avoid "the wrong tree in the wrong place" and "transition" management plans for farms converted entirely to forestry for carbon. To that end, we note that policy needs to recognise that farms are primarily businesses and that any diversification, whether for climate change or otherwise, must be commercially viable for landowners.

However, that support is tempered by a call for the CCC to recommend that regional councils are recognised and empowered as the primary lead to support landowners determining what to plant and where to plant. Again, our experience and the feedback from farmers is that regional councils have a unique and powerful role in this space. (We link this comment to our earlier submissions on the role of local government.)

The Advice should ensure that the afforestation policy is based on "carrot rather than stick". We understand that some regional councils have tried regulatory approaches to get uptake of soil conservation planting. However, TRC has achieved significantly more than those

councils by using education, collaboration and advice. We would recommend this approach to the CCC – especially if coupled with strong economic signals (e.g. an appropriately set carbon price).

Carbon pricing opens the door to CCC recommending a fully integrated approach to the policies around conversion of farmland from agriculture to forestry or horticulture. Some twenty years ago, afforestation policies focused heavily on logging revenues to encourage converting marginal sheep and beef farmland to forestry. Now there are far greater options, with carbon pricing and a wider range of horticultural options open. A comprehensive, advisory approach, with fit for purpose and "fit for farmer" support and information, is key to the success of this approach.

TRC submits that CCC need to broaden the recommendation on the target audience for advice and support in the transition from current farming practices. In Taranaki at least, the size of the proposed changes mean that ring plain farmers are every bit as much in need of support as the hill country farmers that CCC identifies as a target audience. The Advice should be amended accordingly.

TRC encourages CCC to recommend measuring the carbon capture of small scale plantings and blocks. Our experience is that there are significant small, permanently planted blocks that are currently not receiving carbon credits due to perceived difficulties with measuring the carbon sequestered. TRC notes that it has long deployed technology and processes to account for the impacts of riparian planting and other distributed planting throughout the hill country. While it may not meet full IPCC international accounting standards, it has sufficient accuracy to enable measuring tradeable carbon units. If widely deployed, it could be a significant benefit to landowners and could support the CCC's recommended increase in the uptake of native plantings.

#### Rural communities are largely over-looked in the discussion of equity impacts

While the Advice very correctly notes the need to ensure that the proposed scenarios do not have a disproportionate effect on Māori and low-income New Zealanders, another vulnerable group – rural and small town New Zealanders – appear to be overlooked.

The proposed reductions in farming and plantation forestry have greater impacts on this population than the emissions that they create. Additionally, this group has less alternative response options in a decarbonised environment.

Factors that make this group vulnerable include:

- Smaller population bases often create significant barriers to technology options
- Lack of mobility to follow work
- Poor infrastructure in these areas especially electricity distribution systems.

Engaging with and providing for rural communities should be a "necessary action".

## Greater support needed for agricultural methane reduction activities and should include more on denitrification options

TRC strongly endorses the CCC's approach to managing agricultural sector emissions. Weighing up primary sector emissions efficiency and its importance for both New Zealand's economy and global food security is robust and logical.

TRC supports the CCC's call for large and early methane reductions to offset limited carbon dioxide reductions. This strategy, effectively asking agriculture to "do more than its share" for the wider good, is a real opportunity. We particularly support the suggested incentives and investments in technology acquisition and dissemination to help farmers meet this outcome.

TRC questions the absence of any reference to research on drivers of complete denitrification of nitrate in soils under pastoral land (ie. rendering of nitrate ions to benign dinitrogen instead of only to nitrous oxide). Research into the drivers and characteristics of this process, already undergoing field studies in New Zealand, is promising. TRC is therefore puzzled as to why the Advice seems quite pessimistic about such opportunities.

### Conclusions

TRC again thanks the CCC for the opportunity to comment on the Advice

TRC recognises the challenge inherent in the task CCC has undertaken in preparing the Advice. While we have identified areas where we feel that both the process and the Advice itself could be stronger, we do nonetheless congratulate CCC on what it has achieved.

The Advice is the start of developing detailed pathways for the just transition to zero carbon futures. That transition needs a combination of behaviour change and technical solutions (in both demand and supply sides) that recognise the unique contributions and challenges of communities and sectors across New Zealand. More importantly, achieving those targets will require widespread support and buy-in from those same groups.

TRC looks forward to working with CCC and the government to develop and implement pathways that support the Taranaki communities who we serve. As we do so, we offer to provide CCC on-going feedback and to regularly contribute at every opportunity throughout that process.

Yours faithfully



S J Ruru Chief Executive

#### 24 November 2021

Ministry for the Environment Manatū Mō Te Taiao PO Box 10362 Wellington 6143 New Zealand climateconsultation2021@mfe.govt.nz

#### Re: Te hau mārohi ki anamata I Transioning t o a low-emissions and climate-resilient future

Tēnā koe,

Thank you for the opportunity to provide a submission on Te hau mārohi ki anamata I Transitioning to a low-emissions and climate-resilient future.

#### Introducon

Woolworths New Zealand (WWNZ) owns and operates 184 Countdown supermarkets across Aotearoa, and employs over 21,000 Kiwis. We are also the franchisor of FreshChoice and SuperValue.

As a food business, we are acutely aware of the importance the climate plays in food producon and security of supply. As one of the largest private sector employers in Aotearoa, we understand the potenal for climate change to significantly impact societal wellbeing, particularly for more vulnerable communies.' In response, climate change is recognised by our Board as a strategic risk and we are committed to ambitious sustainability goals to address this. Our key climate targets are to reduce our Scope 1 and 2 emissions by 63% and Scope 3 emissions by 19% by FY30, against an FY15 baseline - on the way to net positive emissions by 2050. These targets have been endorsed at Group level by the Science Based Targets iniaàtive, and we also report via the Climate Leaders Coalion in Neaw Zealand. Reinforcing our climate change goal is a commitment to 100% renewable electricity by 2025 and zero food waste by 2025. We are also actively exploring the role we can play to support sustainable and regenerative agricultural pracces in` our supply chain.

We acknowledge the Government's foundational work to set Aotearoa on a course that honors internaonal climaäte obligations and protects future generations. We believe an All-of-Government response operang aät the highest level of urgency is now needed to develop the Emissions Reducon Plan.' Many stakeholders - ourselves included - have contributed feedback via a series of consultaons, including the Climate Change Response (Zero Carbon) Amendment Bill, Climate Action for Aotearoa, and sector specific consultations (e.g. Transport and Building & Construction). Where appropriate, we have included that feedback in our response again below. We fully support genuine, active and enduring partnership with iwi/Māori and believe this is absolutely critical to achieve the targets and goals New Zealand has set. As a member of the Sustainable Business Council (SBC), we stand ready to join with our peers in the business community and support the Plan's development in the coming months. We also believe it will be critical for its success that the draft Plan is consulted on, in advance of its publicaon in Maäy 2022.

Our submission below is arranged in response to the systems, sectors and questions most relevant to our business.

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#### Planning

## *Priority changes in addion t o resource management reform, to ensure our planning system enables emissions reducons across sect ors*

As one of Aotearoa 's leading supermarket operators, Countdown is a regular user of the resource management system. Given the scale of Countdown's existing and future investment throughout Aotearoa, integrating emissions into the way in which we plan for urban development will have implications as to how we plan for, and develop, our supermarkets and supply chain.

Countdown supports integrating emissions with planning decisions. In particular, we agree that strategic planning and investment can lower emissions over time by influencing urban form to support active and public transport. However, we are concerned to ensure that planning frameworks and decisions continue to appropriately recognise the operating requirements of supermarkets and its customers.

Countdown supports the use of strategic planning, such as regional spatial strategies, as a method of identifying growth areas and integrating land-use with key infrastructure and transport nodes. Supermarkets are critical infrastructure in communities and its customers rely on convenient access. Identifying urban growth areas through strategic spatial planning will assist us in identifying areas where a supermarket is needed to service that growth and will support a reduction in emissions by ensuring that our customers have the option of walking or cycling to their local supermarket. Identification of key arterial routes in spatial plans will also assist in ensuring that supermarkets are planned in locaons thaầt are connected to those routes that are likely to be serviced by frequent public transport, providing customers with mode choice.

## Promong urban in tensificaon, support lo w-emissions land uses and concentrate intensificaon around public transport and walkable neighbourhoods

The Consultation Document states that there are major opportunities in planning and investing for a more compact mixed-use urban form, oriented around public and active transport. When looking at future development opportunities, Countdown looks at areas that have a need for, and would benefit from a supermarket, based on population growth and demand. To that extent, some of our supermarkets are located within city centres, while others are most appropriately located within or near residential areas on the city fringe closest to the catchment that they serve.

In planning our cies and deaveloping our planning frameworks, it must be recognised that not all activities are suited to intensive town centre sengs and thaà t intensifying development within those centres may not necessarily support a reduction in emissions. The reality of Countdown's customer base and behaviour is that private vehicles will likely remain the preferred mode of transport for the majority of its customers as they rely on private vehicles, particularly when undertaking bulk shopping, to transport their groceries home. Locating a supermarket within the catchment it serves will support a reducon in emissions and reduce congestion on our transport network as these customers will not have to travel long distances to reach the supermarket.

We support enabling active transport modes in our communities through integrated and strategic land-use planning. However, it is important that in enabling these alternative transport modes and encouraging-centre based development, that it does not unduly restrict development to locaons which` could have the effect of encouraging private vehicle use and inadvertently increase emissions.

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#### Other views in relaon t o planning

Countdown supports bringing climate change into the decision-making process under the resource management system. However, we consider that there needs to be clear guidance on the extent to which, and how, emissions are considered in planning decisions.

The Consultation Document suggests emissions impact quantificaon as a meathod of reducing emissions across sectors. We support an approach to considering emissions under the resource management system that is evidence-based and considers the preferences and behaviours of all user groups. This is important in order to recognise that a "one size fits all" approach is not desirable. Decisions need to be made having regard to the operating requirements of a parcular deaveloper and with a comprehensive understanding of the behaviour of its users, in this case our customers.

We consider that there will be challenges in measuring emissions from certain activities and quantifying their adverse effects on the environment. In this regard, we consider that any emissions impact quantification must be limited to the direct emissions of an activity, where there is a clear causal connection to such activity. This is necessary to provide certainty to developers when planning and designing their developments.

We support the proposal in the Consultation Document to introduce transport emissions impact assessments as a factor in planning decisions. This is an important method to ensure that developers are actively considering how transport to and from their developments impacts on emissions at the outset of a development. However, it is necessary to ensure that the way in which these assessments are applied in planning decisions considers the operating requirements of developers and its users.

Countdown is committed to reducing the transport emissions associated with its operations through providing EV chargers, and by reducing customer trips through encouraging online order and delivery as an alternative method of grocery shopping. These alternative methods should be recognised as relevant factors for any transport emission impact assessments. However, as noted above, we expect that our customers will often rely on private vehicles to complete their grocery shopping and it will not be practicable to avoid private use altogether. To that extent, businesses, such as supermarkets or large format retail stores, should not be unduly penalised under the resource management system where the nature of the activity is not always well suited to public or active modes of transport, and therefore has a higher transport emissions impact.

#### Behaviour change - empowering acon

Fundamentally, we believe that every New Zealander should understand the role they have in helping Aotearoa transition to a low carbon economy. We believe the Government has a critical role to play in further educating and engaging New Zealanders around emissions and climate change. Several recent surveys have shown that New Zealanders feel less urgency about climate change than other naons. This' suggests there is a need to raise the level of awareness of climate change and combat some common myths and misconcepons thaat may be slowing our progress. Any approach needs careful consideraon of the ways knowledge of climate change can generate fear and turn people 'off'. Further, drawing on learnings from the spread of disinformation regarding Covid-19, and the importance of iwi and community partnerships to increase vaccine uptake, a climate change focused campaign would most likely succeed if led jointly by government, local government, iwi and community groups.



# Transport – changing the way we travel, improving our passenger vehicles and promong a more efficient freight system.

# Support for a target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing be. er travel opons, parcularly in our larges t cies, and associated acons

We support this target. Countdown uses light vehicles for our online delivery service. Each vehicle carries orders for up to 54 households per day and we are continuing to refine our transport management approach, for example through real time route opmisaätion. As the growth in online shopping connues, we believe this service contributes to reducing VKT.

We are also actively exploring the introduction of remote pickup lockers at public hubs such as train and ferry stations, reducing the need for separate journeys for our customers to pick-up groceries.

# Supporng the t arget to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated acons

We support this target. Countdown now has five ba. ery electric vehicles (BEVs) in its online delivery fleet, supported through an EECA grant. We connue t o explore the opportunity to expand our zero-emissions online delivery fleet. Currently, the commercial implicaons ar e challenging, as the cost for an electric cab chassis is more than four mes gr eater than the internal combuson engine equiv alent, and fuel savings do not significantly offset this addional outla y given the gh tly opmised r outes driven. This means that as we allocate capital to decarbonise our enr e operaons, electric v ehicle transion is less c ompelling than many other investment opportunies. Ther efore, to achieve (and accelerate) this transion, w e believe targeted Government support for business fleets and charging infrastructure is warranted. We believe policies such as extending RUC exempons and making v ehicles fully tax deducble a fter one rather than five years would help incenvise the tr ansion while sc aling demand to the point that we reach price parity. Broadening criteria for the EECA Low Emissions Transport Fund to enable repeat co-funding applicaons f or the same technology applicaon (t o a certain funding threshold) would also be a welcome enabler.

# Supporng the t arget to reduce emissions from freight transport by 25 per cent by 2035, and the associated acons

As a parcipant in the SBC Low Carbon Freight Pathway project, Countdown supports its recommendaons for a much more ambious 50% reducon in emissions by 2030 and net zero sector by 2050.

We think it is important to note that the majority of the freight task will always be done by road, and while modal shist o rail and coastal freight are important, the heavy road freight task will likely be the dominant mode required in the foreseeable future. For heavy road freight we should be following the SBC recommendaon of r educe, replace, eliminate with opmisa on and modal shi f orming the core of the 'reduce' recommendaon, biofu els the core of the 'replace' and hydrogen as the key soluon f or eliminaon f or heavy freight. We believe that the best way to accelerate this is the priorisa on of support for early adopon of h ydrogen fuel supply and vehicles

We note that the Hīkina te Kohupara – Kia mauri ora ai te iwi Transport Emissions:Pathways to Net Zero by 2050 report has very limited focus on fuel cell electric vehicles (FCEV), however we believe that this mode will be the primary soluon f or the largest part of the domesc fr eight task, this in turn being the largest poron of the tr ansport sector.

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Battery electric vehicles (BEV) will also have a place in our networks for light vehicles such as for online delivery and company cars, however these make up a much smaller proporon of our tr ansport task.

## Supporng the t arget to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated acons

Countdown supports this target which aligns to the SBC Low Carbon Freight Pathway. Further work may be needed to test drop in biofuels for use in light vehicles.

# Seng a me limit on ligh t vehicles with internal combuson engines en tering, being manufactured, or assembled in Aotearoa as early as 2030.

We support the SBC posion of 2032 (f or full ICE vehicles) and 2037 (for hybrid vehicles).

#### Other views you wish to share in relaon t o transport

Broadly, we strongly recommend the adopon of the inia v es recommended in the SBC Low Carbon Freight Pathway and we will work construct ely with Government and sector stakeholders to operaonalise these inia v es.

We believe Hydrogen (FCEV) is the long term soluon f or heavy road freight with biodiesel as a transional fuel to allow exisng flee ts to connue t o operate. BEV for heavy vehicles are prohibiv e, and while the technical efficiency of a BEV model is greater (i.e. they are more efficient from a purely power use point of view), the end-to-end operaonal e fficiency of FCEV is higher. This is as a result of the freight capacity of BEV being lower than the FCEV, resulng in mor e fleet, drivers, kms required, the relav ely low importance of fuel cost to the total cost for heavy road freight (10-20% of the cost of heavy freight).

We see rail and coastal services to be effecve as a spine service, servicing the main logiscs hubs of Auckland, Palmerston North and Christchurch. These services need to have increased frequency and reliability and need to be priced compevely when compared to road. Kiwirail pricing is becoming less compevel and causing freight users to move from rail to road, this trend is not moving in the right direcon. Coas tal freight has been impacted by the disrupons from internaonal shipping. We hope that this is a short term problem, but has exposed a degree of vulnerability for this mode. It would be beneficial if there were more opons for coastal freight with an addional domes c provider.

# Energy and industry – preparing our highly renewable electricity sector to power the low-emissions economy, moving away from fossil fuels, and speeding up industrial decarbonisaon thr ough fuel switching and energy efficiency.

#### Energy Strategy

In addion t o our emissions reducon t argets, Countdown is commi ed to 100% renewable electricity by 2025. We support the development of the Naonal En ergy Strategy and would like to see further guidance on the future shape of the sector, for example the role distributed energy can play in Aotearoa; supermarkets could benefit from on-site renewable energy generaon as their peak demand is during the day and would allow us to mig ate the consumpon associa ted with refrigerant systems. At this point, however, in many cases the commercials are not compev e. We would also welcome guidance on how large energy users such as Countdown can best support a 100% renewable electricity network through our procurement approach.



# Addressing current data gaps on New Zealand's energy use and associated emissions through an Energy and Emissions Reporng scheme

We support the introducon of an En ergy and Emissions Reports Scheme (or similar), and belie ve the proposed threshold of 1 kt CO2e for large staonar y energy users including commercial enes is reasonable. We further support the inclusion of transport companies within the Scheme.

We support the transion t o electric or biomass boilers in the food processing industry and support the recommendaon t o introduce regulaon t o ensure no new coal boilers are installed. However, we note there may be constraints on biomass supply in some regions where there is not significant forestry, and these regions will have to resort to electric boilers that have a significantly higher operaonal c ost. Addional assis tance should be provided for these businesses.

#### Supporng de velopment and use of low-emissions fuels

Regarding hydrogen, while there has been some limited support for the early adopters, the cost of hydrogen at small scale producon is prohibive and prevenngt echnology trials. We respecully suggest the Government consider short-term subsidy of hydrogen that reflects the long term future cost of hydrogen when producon is a t scale. In line with the SBC Low Carbon Freight Pathway, we recognise biodiesel as a good mid term soluon (described as a sec ond horizon in the Pathway), however this will be only a transional fuel and investment in biodiesel should be validated on this basis, while considering the potenal to expedite hydrogen to leapfrog to the long term posion.

# Building and construcon – r educing building-related emissions, and realising health or other co-benefits where possible.

# Mandatory parcipaon in energy perf ormance programmes for exisng c ommercial and public buildings

The design and build of a property can significantly impact its operaonal e fficiency and properes that are designed with emissions reducons in mind will c ontribute to achieving Aotearoa's zero carbon goals. Countdown has commi ed to obtaining a Green Star as-built rang with e very new build for both our supermarkets and distribuon centres. Green Star builds are becoming increasingly popular as the sector looks to improve the standard and sustainability of new buildings. We encourage the Government to ensure that any new frameworks are compable with, and add t o, the exisng from ameworks. The Government should look to work with the New Zealand Green Building Council ("NZGBC") to ensure this programme complements the exisng mark et driven inia v es.

Countdown is supporve of the SBC's posion that NABERSNZ rangs for all office buildings, hospitals, hotels, and retail buildings are mandated by June 2023, while nong that supermarkets would be excluded from this proposed rollout given their unique profile. Supermarkets use refrigerants in chillers and display cases to keep products safe and fresh. The refrigerant systems typically consume around 50% of the store's electricity with around 30% on other heang, venlation and air conditioning (HV AC) and 10-15% on lighng. We would be supporve of contribung to the development of a supermarket specific rang.

#### Capping total operaonal emissions from ne w buildings

In principle, we support the measure of a total emissions cap for new buildings to reduce emissions and increase operaonal e fficiency of buildings. However, we require further clarificaon ar ound what this would look like for supermarkets in parcular. If the proposal is to include emissions from refrigerant

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systems, then the caps indicated in the Building for Climate Change consultaon documen t would not be realise f or a supermarket. We have commi ed to a Science Based Target and emissions reducon pathway for our operaons, and w ould welcome the opportunity to work with the Government to determine an appropriate emissions baseline for a supermarket and the potenal reducons that could be achieved.

Looking beyond new builds, refurbishments present an opportunity to correct inefficient design decisions that resulted in high carbon emission. Without asking the market to focus on refurbishments we are losing the opportunity to make an impact from an emissions perspecv e. We believe refurbishments should need to demonstrate how they will improve the operaonal e fficiency of the building.

# Exploring how to encourage low-emissions buildings and retrofits (including reducing embodied emissions

Whole of life embodied carbon represents a significant proporon of the emissions associa ted with buildings and we will not reach our target of reaching net zero by 2050 without incenvising and encouraging a reducon in these emissions t oo. We support introducing requirements for whole-of-life embodied carbon in buildings, followed by a cap on whole-of-life embodied carbon for new building projects - as proposed in the MBIE Building for Climate Change consultaon - ho wever believe that significant educaon e fforts will be required to build capacity within the building industry to undertake the assessments.

Currently low carbon construcon matterials are not as widely adversed or used by the industry and are also prohibively expensive. Providing more cost effective opons would encourage the use of these materials. The building sector could be encouraged further with minimum standard requirements for certain buildings or an outright ban on certain items, such as PVC pipe covers. We acknowledge the Government is planning to ban this 'hard to recycle' plase and this should be extended to the construcon industry.

The Government may also want to consider making it mandatory or incenvising businesses t o offset residual emissions and allowing them to be capitalised alongside the cost of the building. By making it mandatory to offset residual emissions, the Government may encourage businesses to make more effort to reduce emissions as businesses will want to limit the cost of offseng r esidual emissions.

#### Reducing demand for fossil fuels in buildings

Our business doesn't use coal to directly power our operaons, but we have stores that use natural gas for the ovens and heang. We agree in principle, that there should be no further new natural gas connecons to the grid after 2025. We have found that electric ovens are both easier and safer to run. We have also found that integrang heat trecovery from refrigeraon equipment is an effective way of keeping our stores at ambient temperature. We would support stronger measures that support businesses to make the transion a way from natural gas ovens to electric ones as we have done for many of our stores.

#### Reducing fossil fuel use in industry

In principle we support a limit on emissions from fossil fuels in industry. However (and as an example) we would like further clarificaon ar ound whether this includes combuson fr om diesel backup generators used by our distribuon centres and supermarkets in the event of a power failure. We need backup power to allow us to connue to provide food and groceries to New Zealanders - for example during power outage events. At the moment, there are no cost-effective, renewable alternavies for backup power on the domesc mark et.



#### Reducing construcon was te and increase reuse, repurposing and recycling of materials

Construcon and demolion w aste makes up to 40-50 percent of all waste going to landfill in Aotearoa. Countdown recommends that increased waste levy funding is priorised t o develop adequate infrastructure for this across Aotearoa . Countdown has commi ed that all new property developments will achieve a 4 Green Star design and as-built rang , and by 2025 to have a 5 Green Star minimum standard. However, achieving this will be challenging in some areas, as Green Star requirements include construcon and demolion w aste reducon t argets that are only achievable in certain areas of the country due to lack of adequate infrastructure.

We believe increases to the waste levy and resulng in frastructure investment should encourage reducon in construcon w aste. In addion, the f ollowing measure may reduce construcon w aste:

- Reporng r equirements about waste to landfill and waste diverted from landfill for each project as part of the consent condions.
- Incenv es to use recycled materials in buildings may also help to drive businesses to avoid using new materials (where there are 'second-hand' materials available). This would need to be developed alongside changes to Aotearoa's waste infrastructure, which would allow for new recycled materials to be created.

Demolion pr ojects should be monitored from a waste reducon per specv e. If whole of life embodied carbon consideraons ar e not mandated, there may be a reluctance to reuse material from demolions in new projects or elsewhere.

#### Coordinang and supporng workf orce transformaon

Upskilling the industry and educang the supply chain is cric al to the success of the Building for Climate Change programme. As noted, we have made a commitment to building Green Star rated supermarkets. However, since the release of this standard in Aotearoa, we have found few consultants able to provide the appropriate support to facilitate these sorts of builds. In our view, further work is required to ensure all members of the building trade understand carbon emissions reducon g oals, the purpose of them and how they can and should (as an industry) contribute to them. Building more capacity and capability will also help ensure the costs for these types of builds are not prohibive to smaller businesses and that those businesses wanng t o make posive changes are well supported with ready access to informaon.

# Waste – supporng the w aste hierarchy, priorising the r educon and div ersion of waste from landfill (parcularly or ganic)

Countdown recognises waste as a significant problem for Aotearoa with some of the highest levels of waste per capita in the OECD. We support a transion fr om a linear, 'take-make-use-waste', economy to a circular economy that values and recovers resources.

#### Supporng the t arget to reduce waste biogenic methane emissions by 40 per cent by 2035

Countdown supports the Climate Change Commission's recommended target of at least 40 percent reducon in w aste biogenic methane emissions by 2035. Countdown recognises that organic waste to landfill is one of the biggest contributors to Aotearoa's emissions waste profile and we have commi ed to sending zero food waste to landfill from our operaons b y 2025. We are progressing this goal in a number of ways including via all of our stores having food rescue community partners.

Countdown supports the recommendaon b y New Zealand's Food Waste Champions of 12.3 for the Government to set a food waste reducon t arget in line with the Sustainable Development Goal 12.3 - to halve global food waste by 2030. We recognise this would entail a much greater focus on

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prevenon.Impr oving data collecon acr oss the food system will also be needed to support the target development.

Considering diversion, banning food waste to landfill is another way in which the Government could support the reducon of f ood waste, however as not all areas in Aotearoa have access to alternate processing, this would need to be accompanied by an investment in such infrastructure.

Significantly boosng the c apacity of the food rescue sector through increased funding is also cric al to tackling the issue of food waste, while also providing important community benefits. Countdown partners with 26 food rescue organisaons acr oss Aotearoa and through our Food for Good Foundaon has commi ed \$500,000 per annum to support the expansion of these services. Food rescue should be recognised as a cric al part of Aotearoa's future infrastructure for maximising diversion from landfill in line with the waste hierarchy, but can be overlooked because it is perceived as providing a social, rather than environmental service. Regarding the bioeconomy, we believe the waste hierarchy should also guide any consideraon of f ood waste as a potenal f eedstock for energy, for example for anaerobic digeson. Priority should always be given to ensuring edible food is rescued for human consumpon or f ailing that animal feed.

#### Educaon and behaviour change iniaves

A third of food produced in Aotearoa is lost or wasted from farm to fork. It is cric al to better value food and see any unavoidable waste as a resource that can feed back into a regenerav e circular economy, as opposed to a linear one. Educaon and beha viour change inia v es - parcularly a t a naonal le vel - would be extremely valuable to educate New Zealanders about the co-benefits of reducing food waste, for example saving money, as well as reducing the impact on the environment.

#### Banning the disposal of food, green and paper waste at landfills

Countdown supports the proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030. However, we recognise there are currently significant gaps in the waste infrastructure in Aotearoa. Developing accessible infrastructure across the enr e country is required for businesses as well as effect e household organics collecons f or communies in or der for such a ban to successfully take effect. Smaller, localised soluons should also not be o verlooked when mapping out waste infrastructure in Aotearoa recognising that there will be varying soluons acr oss the country.

#### Installing landfill gas (LFG) capture systems at landfill sites that are suitable

We support the installaon of LF G capture systems at suitable landfill sites. Further, we understand that the current mechanism of calculang emissions f or landfills uses global modelling which we believe may not be fit for esma ng the emissions associa ted with Aotearoa's waste. We believe using technological tools such as methane detecon should be enc ouraged to improve the accuracy and reporng of emissions f or each landfill in Aotearoa. We believe that robust leak detecon and monit oring would benefit Aotearoa by providing a better picture of emissions and allow us to priorise the highes t eming landfills f or improvement. We suggest that waste levy funds are set aside to help landfill owners to obtain and operate robust detecon and monit oring equipment.

### A standardised approach to collecon s ystems for households and businesses which priorises separang recyclables

Countdown supports a standardised approach, which will increase consistency in household and business waste and recycling collecons and s ystems. This will streamline services, enable consistent messaging and

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improve the quality of the recyclable material collected. It would also enable Countdown and other businesses that have commi ed to the Plasc P ackaging Declaraon (and other sus tainability commitments) to confidently specify product packaging that will be widely recyclable.

This standardisaon needs t o be accompanied by a naonal c ampaign to encourage New Zealanders to transion t o the new system. Such campaigns need to look beyond educaon t o draw on behaviour change insights that can incenvise long-t erm changes to recycling pracees.

Increases in landfill levies should also be used to ensure that processing infrastructure is improved, for example opc al sorters installed in material recovery facilies na on-wide t o maximise the types of plasc that can be recycled.

#### F-gases - and reducing hydrofluorocarbons (HFCs) with high-global warming potenal.

# Phasing down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the exisng Kigali Amendment me table

As noted in our Introducon, Countdown has commiled to a Science Based Target of 63% reducon of Scope 1 and 2 emissions by FY30, against a baseline of FY15. 76% of that target will be achieved through reducon in our refrigerant emissions - so we are well aware of the impact that F-gases contribute to climate change. To achieve this, our refrigerant emissions reducon work programme has three key features:

- 1. **Installing transcric al systems.** We have commi ed that all new stores are equipped with transcric al (CO2) cooling systems which operate with a Global Warming Potenal (G WP) of 1. In addion an a verage of three legacy systems are replaced with transcric al p/a, resulng in a t otal of 5 transcric al installaons per annum. Curr ently 21 (11%) of the stores in our por olio have this system, and under the current plan this will rise to 47 (25%) by 2030.
- 2. Retrofing leg acy systems. We are in our seventh year of our retrofit programme, which is successfully replacing higher GWP gases with lower ones as suitable alternav es are idenfied and tested. By 2030, the remaining 75% of our store refrigerant systems will be either subcric al systems (CO2 freezer & R134a, GWP 1,430 chiller) or one of our legacy systems, which are being progressively retrofi ed with lower GWP gas 'drop ins'.<sup>1</sup>
- 3. Energy efficient chillers. We have commi ed to all new builds including doors on chiller units to reduce energy demand and increase the efficiency of refrigerant systems. Drawing on trials and analysis, we are invesg ang the pot enal ener gy and carbon savings achieved through retrofing the remainder of our por olio.

The above refrigerant inia v es are complemented by Countdown's broader energy efficiency programme. This includes LED upgrades and the rollout of an energy management centre to monitor energy consumpon and f aults.



<sup>&</sup>lt;sup>1</sup> We are converng the r emainder of our legacy R404a refrigerant systems (GWP 3,922) to R449a (GWP 1,430, i.e. 65% lower GWP) with 38 stores already retrofi ed and 54 stores remaining. This is in addion t o our 56 subcric al systems (CO2 & R134a, GWP 1,430), which will be targeted for a lower GWP drop-in gas following the R449a retrofit programme. Our remaining 20 stores on higher GWP refrigerants have already been replaced with a lower GWP equivalent (R407F, GWP 1825), which replaced the ozone-depleng R22 g as), with most of them next in line for a replacement transcric al system.

We believe that our approach to refrigerants phase-down within our own operaons is mark et-leading in Aotearoa and have invested significantly in our phase-down programme. Having reviewed the proposed GWP limits and associated melines ag ainst our programme, we can achieve - and support - the requirement that all new systems be transcric al (CO2) by 2023. However, we do not believe the accelerated phase down proposal for servicing legacy systems is feasible in its current form. We assume that if it is challenging for our business to achieve, it will likely be even more demanding for the wider market. This is consistent with the analysis in the 'Impact Summary: Phased prohibion of refrigerant-containing products and servicing opons' c onducted by the Ministry for the Environment ahead of this Consultaon, which iden fied ther e is 'limited evidence of the achievability' of 'phase-out usage of high GWP for servicing'.

We see the liming f actors as follows:

- There is currently a small labour force trained in Aotearoa to undertake complex refrigerant installaon, r etrofing and ser vicing programmes, of which Countdown already demands a leading percentage of work. The availability of skilled refrigerant technicians and length of mer equired for retrofits and installs already acts as the primary constraint on our programme, liming our retrofits to an average of 20 stores per annum and transcric al installaons t o 3-5 per annum. This doesn't factor in the impact on the exisng skilled r efrigerant technician labour pool that would result from increased market demand due to more stringent F-gases regulaon.
- COVID-19 has impacted the scheduling of our programme for FY21 and FY22. Shipping delays on refrigerant products have increased more than 3-fold, alongside significant delays on physical systems, which are manufactured offshore.
- Substanal engineering t esng w ould need to be required to ascertain the suitability of the Government proposed drop-in refrigerants (R513A & R450A) for legacy systems in Countdown's por olio, including large store infrastructure, self-contained cabinets and HVAC systems. Current limits are not feasible given the 2023 meline, made mor e difficult by the limited availability of the suggested refrigerants and their lack of market tesng in Aot earoa.

Working through our raonale, under the Go vernment's proposed GWP limits for 'Servicing' systems, by 2023, all of our stores would need to meet the proposed <750 GWP limit. Given the progress we are making with our retrofit programme, we ancipa te approximately 90% of our systems would comply with this limit, but the remaining 10% of legacy systems would not be feasible to transion within this meline. This is because we are priorising our r etrofit programme according to removing the highest GWP gases from our por olio first. The remaining 10% of our systems remaining at 2023 have already been retrofi ed using R407F with a GWP of 1825, but this would sll e xceed the proposed limit.

Further, by 2032, under the proposed GWP limits for 'Servicing' systems, the remaining 75% of our systems would need to be fully replaced by transcric al systems in order to meet the <150 GWP limit. This would require 160 further stores to transion t o transcric al (beyond our targeted programme) at a cost of \$NZD2.5m per system and three months installaon me per s tore, which with the exisng skilled labour pool would take 32 years to complete, to 2054. Addionally , this would result in the write-off of significant resources and investment already made in the extensive retrofing pr ogramme underway.



Given that our current programme is already ambious and aligned with achie ving our endorsed Science Based Target, we have three requests to ensure feasibility of future Government mandates related to F-gases, for the food retail sector.

**Ask 1:** We respecully ask f or a realisc update to the ming s tructure for phasing down and phasing out key F-gases. Within the 'Commercial Refrigeraon - f ood retail' applicaon c ategory, Countdown suggests updang the e xpectaons in 'F or Servicing' to <1500 by 2028 and <750 by 2038. We are comfortable with the current expectaons r elang t o 'News Goods and Systems', given our commitment to only install transcric al refrigerant systems (GWP 1) in new builds.

**Ask 2:** Lisng r efrigerant technicians as a skills shortage to grow and relieve a pressured and small group of technicians currently servicing the industry. Current standing makes it difficult to get the necessary technicians from overseas, which has already been negavely impacted by immigraon r estricons due t o COVID-19. Exploring mechanisms to support more local apprences in to this career specialisaon w ould also be advantageous.

**Ask 3:** Subsidisaon or r ebate schemes for replacement of legacy systems with equivalent lower GWP systems. Due to the nature of Countdown's emission profile, Scope 1 vehicle fleet emission contributed just 10% in FY21 compared to the 86% from refrigerants. We ask for the consideraon of a f eebate scheme to transion the na on' s refrigerants similar to that of the transport system transion thr ough the Clean Car Discount scheme promong EV uptake.

**Extending the import phase down to finished products containing high-global warming potenal HF Cs.** This would have a minimal impact as we purchase small quanes of self -contained integral units. Most of Countdown's third party suppliers of refrigerant charged systems/units have already started converng t o lower GWP refrigerants. We would always look to purchase the lower GWP equivalent, given it met our specificaon needs.

However there should remain the opportunity to purchase smaller amounts of high GWP refrigerant (i.e. R404a and R134a) to support stock levels for maintaining legacy systems including large store infrastructure and self-contained integral units (plug-in displays), as these systems are gradually phased out.

# Restricng the import or sale of finished products that c ontain high-global warming potenal HF Cs, where alternaves are available

We should not purchase this equipment if there is a low GWP alternave that sas fies the required specificaons.

#### Ulising lo wer global warming potenal re frigerants in servicing exisng equipmen t.

Ulising lo wer GWP F-gases in refrigerant systems should form an integral part of the government's emission reducon plan. Ho wever, we believe the expectaons and melines outlined in the dr a schedule are unfeasible for large food retail organisaons in their curr ent form. In addion t o the consideraons idenfied abo ve, we note that Countdown will need to retain stocks of higher GWP refrigerants (i.e. R404a) from FY22 to FY26 to support and maintain legacy systems as the current retrofing pr ogramme is completed. This is balanced to a degree by our refrigerant recycling inia v e which recondions w ould-be waste refrigerant into usable product for legacy systems, however too restricv e a regime for higher GWP refrigerants could place pressure on our ability to service and maintain legacy systems as we decarbonise our overall store network.



Alternaves t o HFC refrigerants Aotearoa should ulise (eg, h ydrofluoroolefins or natural refrigerants) We believe transcric al systems that ulise C O2 as a refrigerant are the best long term soluon f or commercial refrigeraon, especially supermark ets and cold storage systems.

We urge cauon ar ound the promoon of flammable na tural refrigerants due to the necessary training requirements and health and safety risks associated with retaining and using the large quanty r equired to maintain operaons of our sc ale. Factors for consideraon include t otal refrigerant charge figures, locaon of equipment, volume requirements in systems and availability of trained technicians.

# Ways to reduce refrigerant emissions, in combinaon with other aspects of heang and c ooling design, such as energy efficiency and building design.

Alongside our pracet o install doors on chiller units in all new stores, we also see significant benefits to retrofing door s on chillers in exisng s tores. Our research has idenfied an 8% r educon in electricity use where doors are retrofi ed to a selecon of in-s tore chillers. Furthermore, the installaon of door s reduces the workload on exisng r efrigerant systems, drawing down potenal leak age rates and associated CO2e emissions.

As a result, we believe doors on chillers need to become standardised across the food retail sector. We intend our new Green Star cerfied s tores to serve as flagships for innovav e emissions reducon and energy efficient features.

The Consultaon Documen t indicates a further consultaon will t ake place in due course regarding policy to support the transioning t o lower GWP refrigerants and that at this stage the purpose is to gather data on feasibility. We welcome the opportunity to engage further on this topic - as it is highly material to our business and we believe we have valuable insights we can share in support of an ambious F-g ases phase-down for Aotearoa.

#### **Final comments**

We welcome further opportunity to engage with the consultaon pr ocess alongside other stakeholders as the Emissions Reducon Plan is de veloped.

We thank you for the opportunity to provide a submission on this important work.

#### Ngā mihi,



Kiri Hannifin General Manager Corporate Affairs, Quality, Safety and Sustainability





23 November 2021

Emissions Reduction Plan Consultation Ministry for the Environment PO Box 10362 Wellington 6143

By E-mail to climateconsultation2021@mfe.govt.nz

### Re: Counties Energy submission on government discussion document "Te hau mārohi ki anamata / Transitioning to a low-emissions and climate-resilient future"

We welcome the opportunity to comment on the government's Emissions Reduction Plan (ERP) discussion document, *Te hau mārohi ki anamata / Transitioning to a low-emissions and climate-resilient future.* The recent COP26 highlighted the urgency with which we must act to rapidly reduce emissions in order to minimise the impacts of climate change. The ERP is our opportunity to make significant emissions reductions in New Zealand and needs to reflect that urgency be ambitious and actionable.

At Counties Energy, we believe energy can change lives for the better. We support the view that taking action on climate change is increasingly urgent; lowering emissions and helping others reduce their carbon footprints through sustainable technologies is becoming an increasing focus for us. Our new energy journey includes a focus on smart grid technologies and customer-focused energy ecosystems such as virtual power plants and community energy schemes that utilise electric vehicle charging, renewable energy and cutting-edge digital technologies. We understand and support the government's focus on gross emissions reductions.

We strongly support the principles of making an equitable transition. There is an important balance that needs to be met to ensure that carbon prices drive business decision-making and investment while also ensuring that all of society can keep up with technology changes. We believe that developing the Equitable Transitions Strategy should be at the forefront of the government's emissions reduction plan to ensure that support is available to those most vulnerable or highly impacted by the coming changes.

This short submission focuses on the consultation areas that are relevant to our business interests and where we believe significant inroads can be made in reducing New Zealand's emissions.

#### Transport

At Counties Energy, our focus around reducing transport emissions is two-fold. Firstly, we want to demonstrate leadership within our own business through trialling technology and committing to



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converting our own vehicles to electric where possible. Secondly, we view ourselves as part of the solution to enable successful electric vehicle uptake throughout our network.

In our business, 85 percent of our emissions come from vehicle use. Our network area is large and quite remote. Our fleet is made up of mainly medium to heavy vehicles which we rely on for tasks such as heavy hauling or site work, for example working at height. We have identified opportunities for lowering fuel usage by adding electric battery options to diesel vehicles. This ensures that diesel is only used where required and battery power can be utilised for onsite tasks. We are committed to this type of innovative leadership and will continue to look for technology options to trial and prove. We believe the proposed electric vehicle targets would not drive this type of innovation and we recommend that the government broadens the scope to include all vehicle types.

Counties Energy supports the target of increasing zero-emissions vehicles to 30 percent of the light fleet by 2035. We support an ambitious roadmap to accelerate the transformation of the transport asset make-up. Electric vehicle targets should also be accompanied by policy which reflects the availability, affordability and fuelling of such targets to ensure that the framework is able to support them.

For our electricity distribution network, we recognise that there will be an impact on the electricity network from the increased number of electric vehicles. It could be quite considerable dependent on variables like network clustering, battery size, charging behaviour and time of charging. Traditionally, electricity networks are designed around number of houses, demand is monitored, and upgrades are made where required. An average house has a load of 2.5kW; an electric vehicle charger can require between 2.4kW to 50kW dependent on the battery and charging option chosen by the consumer. So, one electric vehicle on a street is the equivalent to adding between one and 20 homes. (Source: Vector EV Network Integration Green Paper) Thus, the connection of electric vehicle charging on networks at 30 percent is likely to add stress and surpass network capacity. It's important to look for solutions to overloading and network peaks, which will reduce network reliability, as well as continuing investment in network capacity.

Counties Energy is encouraging off-peak use by making off-peak prices available and, additionally, offering cheaper controlled line charges at 1c/kWh. By utilising controlled electricity for electric vehicle charging, there are many benefits for both the network and the consumer. A dynamic charge algorithm could consider variables such as charge status of the vehicle, network congestion, overall emissions profile of the network and owner behaviour to schedule charging at the best possible times. Smart charging technology has significant benefits for the consumer and also helps to displace carbon from the electricity system by reducing peak loads where high-emitting thermal plant is required.

Our subsidiary, ECL Group, operates the OpenLoop charging platform that currently serves many commercial EV fleet owners throughout the country. The software service provided through the OpenLoop platform also enables users to optimise corporate fleets by providing information such as billing across different chargers (home, workplace, public), availability of renewable energy for charging and options for demand response. This is a great example of smart technology providing customer choice and supporting decarbonisation. <a href="http://www.openloop.co.nz">www.openloop.co.nz</a>

Counties Energy has also joined forces with an Australian battery technology company, Relectrify, to deploy New Zealand's largest battery system repurposing electric vehicle (EV) batteries to



date. The battery system combines Relectrify's BMS+Inverter technology with end-of-life batteries from nine Nissan Leaf electric vehicles to store over 120kWh of energy. Already in operation in Counties Energy's utility testing lab, providing 380–415V 3-phase peak shaving, the battery system will be installed on a priority site on Counties Energy's network where it could provide redundancy, flexibility and resiliency for customers in a remote rural area. This highlights the value that cost-effective batteries can unlock to provide reliable, affordable power in isolated communities and power grids more broadly. This technology will also be used along with highpower EV chargers in Mercer to optimise the network capacity and minimise demand on the network at peak times.

Another technology that Counties Energy is piloting is Vehicle-to-grid (V2G) technology. This technology enables electric vehicles to be charged when power prices are low and to also feed back to the network when prices are high. This provides financial benefits to the owner, helps to manage peak loads and displaces thermal electricity emissions. Several electric vehicles can be linked together to feed back to the network at the same time, therefore creating a 'virtual power plant'.

Smart electric vehicle technology will have an important role in decarbonising both the transportation and energy sector in the future. The emissions reduction plan should consider how policy can enable these solutions coupled with electric vehicle targets to ensure that the uptake of electric vehicles can be future-proofed, and how electricity distribution businesses can assist in accelerating the uptake of EVs whilst keeping the network safe and reliable.

Counties Energy also supports the idea put forward by the Sustainable Business Council in their ERP submission to identify ways of minimising Aotearoa's EV supply risk by working collaboratively, both nationally and internationally, to boost bargaining power – both to ensure we can access the latest EV technology and also to ensure New Zealand doesn't become a dumping ground for old technology.

#### Energy

We support a renewable energy target as recommended by the Climate Change Commission and agree with the Climate Change Commission's position that government and business would reduce emissions faster and more affordably if government prioritises other more carbon-intensive emitters (transport, process heat), over investment in 100-percent renewable electricity generation. We agree with the Climate Change Commission that the overall path to net zero carbon should deploy the least cost abatement options first. We believe that decarbonising the transportation sector will help to decarbonise the energy sector through the examples given above.

We recommend that the government prohibit the use and development of new fossil fuelconsuming process heat plants where technology is available. A transition plan should be developed in conjunction with government and industry to phase out the operation of fossil fuel stationary energy processes by 2050.

We also recommend that support (through the GIDI fund, or similar) and investment to accelerate the switching from fossil fuel to low-emissions fuels or electricity is broadened to include both large and small users. In our experience, significant users of fossil fuels on our network are unable



to justify the economics of switching to electricity and therefore an incentive would encourage faster uptake.

#### Introducing an Energy and Emissions Reporting Scheme

The government is proposing a mandatory energy and greenhouse gas emissions reporting scheme for large energy users. The current proposal includes a suggested reporting threshold of 1 kt of CO2<sub>e</sub>. Counties Energy falls within this threshold; however, we already have plans underway to publicly report our emissions data. Emissions reporting requires specialist skills and significant resource to understand and implement emissions reductions plans. The proposed threshold is quite low; to be effective, the government should consider providing simple online tools to minimise additional resource requirements for business.

#### Zero-emission buildings

The building for climate change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Counties Energy supports the Commission's recommendations that new fossil gas connections in all buildings, and gas reticulation of new subdivisions, be ended. We believe this can be done immediately with no economic impact because there are electric alternatives currently available at no additional cost. We continue to work with developers to encourage no further gas reticulation in commercial and residential developments.

In our experience, new residential reticulated gas is being installed in high socio-economic areas, therefore, prohibiting new connections will not have an impact on vulnerable communities. Similarly, there should be a ban on the sale of reticulated gas appliances because there are cost equivalent electric appliances and this initiative would have a reduced impact on lower socio-economic areas. Through these measures, along with high renewable electricity, New Zealand could be a world leader in zero-emission buildings.

We look forward to working together with our community and providing leadership on reducing emissions to ensure a better future.

Yours sincerely,



Genelle Palmer Environment and Sustainability Manager



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#### Emission reduction plan consultation

Date: 24/11/2021

Thank-you for the opportunity to comment on the Consultation Document.

Daikin is recognized as the leading air conditioning and heat pump manufacturer across the world. As one of New Zealand's most trusted names in heating and cooling, Daikin can be found in homes, offices, schools, hotels and shops across New Zealand and around the world.

Daikin Air Conditioning New Zealand Ltd has three branches nationwide and we distribute products throughout the air conditioning specialist installer channel from Cape Reinga to Stewart Island.

At Daikin we always strive to improve energy efficiency through all our product and system solutions within the heat pump and air conditioning sector and remain at the forefront of energy efficiency improvement and lower GWP refrigerant adoption. In fact, we invented R32 one of the most common lower GWP refrigerants available today. We would like to express our appreciation to the New Zealand Government for raising the topic of energy efficiency in this consultation document.

As Daikin Air Conditioning New Zealand Ltd, we would like to comment on the consultation document as below.

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

Question 70 response: We agree with the Commission's recommendation to introduce mandatory participation in energy performance programmes. We would suggest introducing minimum efficiency levels with a transitional grace period.

71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

Question 71 response: Transition to a model where heat pumps, heat recovery ventilation and hot water heat pumps are considered during design & build as an energy reduction to meet the improved energy efficiency of buildings. This will also improve health and wellbeing. 72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

Question 72 response: We agree with setting a date to end new fossil gas connections in all buildings and for eliminating fossil gas in all buildings. Hot water heat pumps could be substituted for gas hot water systems as a retrofit option.

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings

Question 73 response: In order to address fossil fuelled space and water heating boilers we suggest utilizing low, mid and high temperature hot water heat pump technology already available in New Zealand to optimize energy efficiency and reduce overall GWP.

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

Question 76 response: In general, we support the behaviour change to raise awareness of low emissions buildings for consumers and industry. We suggest Greenstar or equivalent for commercial buildings and Homestar or equivalent for residential buildings for better market visibility around energy usage and embodied carbon.

77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

Question 77 response: We should recognize that New Zealand is a technology importer and our market is too small to influence product design. We should look to adopt standards and practice from larger markets such as Europe, North America, Japan, and Australia who have more resource and investment in this area and generally lead innovation.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

Question 78 response: HVAC products such as air conditioners are generally recycled for scrap metal. This has been in operation for over 25 years reclaiming high value copper, aluminium and steel. Generally, the HVAC industry recycle the majority of their product.

79. What should the Government take into account in exploring how to encourage lowemissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives? Question 79 response: The government could use a number of financial incentives such as: a) Support replacement of gas boilers with heat pumps with a financial support programme. b) Support home heating incentives for high efficiency heat pumps.

80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

Question 80 response: The Government will need to provide retraining opportunities for those workers that have similar skillsets such as Plumbers (gas) and HVAC technicians. To do this there will need to be clear transition path communicated with a clear set of outcomes or we will have an under-resourced growth industry not able to keep up with demand.

There would also need to be an investment in increased training resourcing to accommodate the increased numbers.

81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings

Question 81 response: The Government's efforts to provide a better thermal performance of homes and those new home being built tighter than ever means there is less infiltration and a higher requirement for ventilation and cooling of the solar load that cannot escape these spaces. The decreased infiltration and higher thermal performance will allow the specification of smaller air conditioning systems and allow a greater degree of control within the thermal envelope of the building.

Heat recovery ventilation and ducted heat pumps offer an option to ventilate while warming or cooling the home and the heat recovery ventilation option, in particular, provides a path to the eventual requirement for Net Zero buildings.

100. Do you think it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable, or not?

Question 100 response: While we agree with the intent to speed up the phase down of HFC's, we believe it is too early to assess this after the recent enactment under the Kigali Amendment to the Montreal Protocol and the disruption that COVID has provided from 2020. Further information and assessment should be made prior to a further phase down being mandated. Currently there is not an information base available to appropriately assess what would be achievable.

We recommend that from say 2023 that MfE agree a regular review of the phase down of HFCs and GWP limits on equipment types every three years. We would point to the analysis paper "Hydrofluorocarbon Consumption in New Zealand 2018" as an example of the information and analyses that can be performed. Changing the agreed phase down levels could have a severe effect on the installed base and new equipment and requires this further detailed analysis to assess.

#### 101. One proposal is to extend the import phase down to finished products containing highglobal warming potential HFCs. What impact would this have on you or your business

Question 101 response: In principle we have no issue with GWP limits that are correctly applied. Smaller heat pumps with a small charge size 2.6kg or below would be recommended however there are some categories that might require a longer time to transition across than others.

At less than 0.1% of the global market and with little manufacturing, New Zealand is not a driver in the move to adopt low GWP alternatives, instead as technology adopters we move with the development and adoption of technology of major markets overseas.

At the same time, we have to assess all issues around the adoption of new refrigerants to ensure they are not only relevant to our market but that they are able to be continuously supported, meet the market requirements around cost so as not to damage the health and wellbeing of the adoption of heat pumps and whether they are able to meet our New Zealand health and safety regulations.

To mitigate the risk the same consultation with industry in a three-year cycle should be proposed to assess and agree the best path forward for the safe and considered adoption of new technology.

## 102. What are your views on restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available?

Question 102 response: This consultation paper suggests pre-charged equipment imports be included in the quota system. We are opposed to this for two major reasons: The Montreal Protocol and the Kigali Amendment clearly places responsibility for refrigerant in equipment in the country where the equipment is manufactured, not imported. The international community rightly assumes action will happen there to change refrigerant type because of the Kigali Amendment.

Pre-charged equipment represented less than 10% of the European Union's imports over the base year. In 2016, they represented 45% of New Zealand's imports.

This proposal would lead to significant industry disruption and, among other things, imperil both the agriculture industry that relies on refrigeration and the further introduction of high efficiency heat pumps.

## 103. What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?

Question 103 response: We are opposed to putting a GWP limit on servicing existing equipment already in use. Building owners have made a significant investment in equipment with the inherent assumption that they would be able to get all spare parts over its operating life including refrigerants. The equipment has not been tested with the alternatives and there is no data around the life expectancy of the equipment with the alternatives leading to a potential reduction in the investment return for the owner. We also run the risk of tradespeople utilising refrigerants across different safety classes which the equipment was not designed for which is unacceptable and creates a health and safety risk.

We would recommend that MfE work with industry to understand where replacement gases are available and can be safely used. The current increasing emissions trading charge combined with the declining quota should provide more than enough incentive to use lower GWP alternatives.

In order to fully assess a new refrigerant, there are many facets that must be taken into account such as GWP, safety, efficiency, ease of use, how it breaks down, cost and other factors and is not something that Governments typically can assess effectively but should rely on industry for advice.

### 104. Do you have any thoughts on alternatives to HFC refrigerants Aotearoa should utilise (eg, hydrofluoroolefins or natural refrigerants)?

Question 104 response: The Montreal Protocol and the policy previously enacted by the New Zealand Government has set out expectations and requirements for industry to shift away from those substances with a high environmental impact. It relies on economic forces that come with decreasing amounts of refrigerants available. Dictating detail is not necessary.

This has been a successful strategy and has seen the eradication of CFC's, just about all HCFC's and it will continue to be successful with HFC's as we continue to see great improvements.

The New Zealand Government should set the framework but not attempt to make the choices that industry will make as it phases down HFCs, leaving that to manufacturers and equipment designers to manage under the drivers from much larger markets to reduce or replace.

105. Can you suggest ways to reduce refrigerant emissions, in combination with other aspects of heating and cooling design, such as energy efficiency and building design?

#### **Recycled refrigerants:**

There is active debate among the industry and regulators about how recycled refrigerants should be treated. These are refrigerants that are recovered from machines at the end of their life and returned to specification. In California, these gases are considered to have GWP of 0, on the basis that they are replacing a new molecule of refrigerant that would have been produced. In this way the potential emissions to atmosphere are halved and there is an incentive to recycle. Other approaches argue against any recycling on the basis that the likelihood is that the refrigerant may leak in the future. It is not an easy debate, and we do not wish to present a view currently on this issue. We encourage MfE to consider this topic and consult on its views further in the future.

#### Licensing:

HFCs are potent greenhouse gases. It simply makes no environmental sense that anyone can purchase or use these substances if they are not qualified to do so. We propose that a licensing scheme based on a tradesperson's competency (not just environmental awareness) be implemented to ensure only trained personal are engaged in the industry.

A mistake made in Australian policy was limiting this requirement to simply those people that access HFC and ODS refrigerant. As industry associations in Australia have pointed out, we would contend that all tradespeople installing, servicing, repairing and decommissioning refrigeration and air conditioning equipment need to be covered by a comprehensive scheme. The three main reasons for this approach include:

• Despite the efforts of restricting HFC refrigerants to licensed personal only, experience overseas show there is leakage to the unlicensed sector which leads to higher emissions and unsafe work practices.

• The benefits of trained technician sizing, installing, repairing, and servicing equipment include performance improvements – increase in efficiency. This is true regardless of what refrigerant is used and is worth maximising to obtain higher levels of cost-effective abatement.

• This approach would allow safety aspects to be incorporated into a scheme particularly as many of the uncovered low GWP refrigerants are flammable. In this way, a single licensing scheme would cover the entire sector saving both industry and government money.

We also recommend that only trained personal be empowered to obtain, sell or store refrigerant. In this way, it would become illegal for anyone to provide an HFC refrigerant to someone who is not licensed.

#### Including maintenance:

The maintenance of equipment improves operating efficiency, reduces breakdowns and the need for repair, and extends equipment longevity. There is not comprehensive data on this topic, yet. However, both the Montreal Protocol's TEAP and Australian Government and industry are conducting and tracking research that should clarify the scale of the issue. Very early findings suggest that poorly operating equipment will have a reduction in efficiency of

10% or more and, in Australia, up to 20% of all equipment are not adequately maintained. The result is there is a large discrepancy between theoretical and actual performance that could be addressed through implementing servicing requirements. We do not have a model to propose at this time, but recommend to MfE further consultation on this topic with the aim of developing a policy approach should research findings demonstrate the potential scale of abatement that is expected.

Sincerely Yours

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# DairyNZ Submission: Transitioning to a low-emissions and climate-resilient future

Thank you for the opportunity to shape the Government's eventual Emissions Reduction Plan.

#### Executive Summary

DairyNZ is firmly committed to dairy farming playing its part in transitioning to a lowemissions economy alongside the rest of New Zealand.

This transition needs to be equitable, fair, and grounded by scientific, economic, social, and cultural considerations.

We know there will be changes required, therefore we must be confident that the transition pathway is justified. We will also need to fully understand what it will take to enable and support this transition process.

We can make practice changes with the tools and knowledge we have available now, but this will not get us all the way there. We need substantial R&D investment to accelerate the approaches and solutions available. If we can find these solutions, this will ultimately also be our biggest contribution to global agricultural emissions – to halt agriculture's warming contribution.

In an Emissions Reduction Plan for the agricultural sector, we call for:

- Enabling a successful outcome for the Primary Sector Climate Change Partnership *He Waka Eke Noa* so that this partnership is enduring for business certainty.
- Commitment for the Biological Emissions Reduction Science Accelerator (BERSA) process to identify actions and initiatives to accelerate the development and availability of a range of emissions reduction technologies, across the pipeline from knowledge to impact, coupled with a long-term investment plan.



- Commitment to ramp up extension services for farmers so they can assess their options and implement their plans to report and manage greenhouse gas emissions.
- Better modelling and discussion of the distributional impacts of Government policies on rural communities.
- Further research is done on transport needs and patterns for rural communities, so that low-emissions options can be developed with an evidence-base. We would encourage pilots to be established.
- The Government to ensure that on-farm actions to reduce emissions flow through to the National Greenhouse Gas Inventory, to track and incentivise action.
- Incentivising support for farmers to join Dairy Base to show more farmers where they sit relative to others, to amplify understanding, options and build on practice changes.
- Adopting the advice of the Climate Change Commission for afforestation policies that the NZ ETS should be amended to strengthen the incentive for gross carbon dioxide emissions reductions and to manage the amount of exotic forest planting the NZ ETS drives, in line with the Commission's advice on the proportion of emissions reductions and removals necessary for meeting emissions budgets.
- A split gas approach which better characterises the differences between long-lived and short-lived gases and is an appropriate science-based target for biogenic methane.
- The Climate Change Response (Zero Carbon) Amendment Act and the Emissions Reduction Draft Plan specifically states a temperature goal as its purpose; therefore, the government needs to adjust from counting emissions to stating the warming contribution of methane. GWP\* is an appropriate metric for accounting for the warming effect of short-lived greenhouse gases.



#### Introduction

DairyNZ is the industry good organisation representing all 11,000 of New Zealand's dairy farmers. **Our purpose is to provide a better future for farmers by enhancing their profitability, sustainability, and competitiveness.** The dairy sector employs 50,000 people, generates \$20b in export earnings, and comprises one third of all goods revenue. In 2018, we produced 25% less emissions per kg milk solids than if we had not invested in developing science to make more dairy farming more efficient.

DairyNZ is committed to dairy farming playing its part in transitioning to a low emissions economy alongside the rest of New Zealand and supporting the delivery of the Zero Carbon Act. We have active programmes to support farmers as they transition to lower greenhouse gas emissions.

The following views relate to shaping the Government's Emissions Reduction Plan (due in 2022) and progressing actions on agriculture and climate change internationally.

As we begin to implement pricing for biological emissions from 2025 for agriculture in New Zealand, it is important that New Zealand dairy farmers know that other nations are also making serious efforts to reduce their agricultural greenhouse gases. The recent Global Methane Pledge does begin to bring this issue into focus for other countries. We urge Ministers and officials to lead on these issues internationally.

New Zealand's dairy sector is committed to remaining the most efficient producer of low emissions milk in the world. Our focus as a sector is sustaining our success, as consumers and communities increasingly seek sustainably produced food.

New Zealand dairy farmers' hard work and their investment over decades has contributed to this world-leading status. Our grass-based, outdoor grazing system is unique globally and is critical to our success.

We can make practice changes with the tools and knowledge we have available now, but this will not get us all the way there. We need substantial R&D investment to accelerate the approaches and solutions available. If we can find these solutions, this will ultimately also be our biggest contribution to global agricultural emissions.

#### **Context for Transition**

Our dairy farmers must fund the cost of this transition, by and large themselves though the context of continuing to operate as a profitable business.

The vast majority of our global competitors are making these shifts with support through subsides. As we assess the impacts and trade-offs of this effort for climate change, we cannot lose sight of that.

Farmers are dealing with a multitude of challenging issues, including greenhouse gas emissions, water policy, animal care, biosecurity, and labour issues.



We want this transition to be equitable, fair, and grounded by scientific, economic, social, and cultural considerations. The Government has coined the term "a just transition" and has recently joined the *International Just Transition Declaration* that acknowledges that countries must respond in a way that is fair to everyone. We know there will be changes required, therefore we must be confident that the transition pathway is justified. We will also need to fully understand what it will take to enable and support this transition process.

It is important to dairy farmers that the sector's pathway is adaptive and reflects what is realistically possible on-farm. Our pathway should also recognise the economic and social costs of doing so, as well as the potential impact on rural communities.

The following views relate to the issues and questions asked in the Government's discussion document entitled **Te hau marohi ki anamata: Transitioning to a low***emissions and climate resilient future*. Page and paragraph numbering from this document are italicised here for ease of cross reference.

We note that this Emission Reduction Plan will need to coordinate the strategies and plans listed elsewhere within this document. We list them here for reference:

- a. Emissions Reduction Plan
- b. Treaty of Waitangi Strategy
- c. National Energy Strategy
- d. Circular Economy Strategy
- e. Bioeconomy Strategy
- f. Freight and Supply Chain Strategy
- g. Industry Plans
- h. Building Transformation Plan
- i. Equitable Transitions Strategy
- j. New Zealand Rail Plan
- k. National EV Infrastructure Plan
- I. Hydrogen Roadmap
- m. Multisector Strategy

The sheer volume of plans and strategies proposed is overwhelming. Their coordination, sequencing and synchronicity will be a feat of management. While indicative of a desire to 'manage' the transition we implore the Government to provide clear, predictable, coherent policy settings. Farmers deserve to have well signalled, practical, fair and coherent Government policy across the gambit of current reform programmes, including for climate change.

DairyNZ has just released its annual View from the Cowshed report, which was based on the feedback of 425 farmers who opted to be surveyed between April and May this year. Fifty-seven percent of farmers surveyed said changing government regulations are causing them a lot of stress. A further 67 percent of farmers feel there isn't enough support for farmers dealing with mental health issues. More than half of those surveyed



said they or someone on their farm had experienced a mental health issue in the last year.

#### Page 10: In-principle decisions on emission budgets

DairyNZ does not agree that long-lived and short-lived gases should be bundled together using the GWP100 metric. We have also submitted to the Climate Change Commission on this issue.

The latest IPCC AR6 report from Working Group I affirms this point. There is broad scientific consensus that the short-lived greenhouse gases do not need to reach net zero emissions to reach net zero warming.

We suggest emissions budgets that separate long-lived gases from short-lived gases. There is a credible, and more accurate way to measure the warming impact of short-lived greenhouse gases. This is evidence – it should be used.

The IPCC in its recent Sixth Assessment Report (AR6) says: "The choice of emission metric affects the quantification of net zero GHG emissions and therefore the resulting temperature outcome after net zero emissions are achieved. In general, achieving net zero CO2 emissions and declining non-CO2 radiative forcing would be sufficient to prevent additional human-caused warming. Reaching net zero GHG emissions as quantified by GWP-100 typically results in global temperatures that peak and then decline after net zero GHGs emissions are achieved, though this outcome depends on the relative sequencing of mitigation of short-lived and long-lived species."

"In contrast, reaching net zero GHG emissions when quantified using new emission metrics such as CGTP or GWP\* would lead to approximate temperature stabilization (high confidence) {7.6.2}." "By comparison expressing methane emissions as CO2 equivalent emissions using GWP-100 overstates the effect of constant methane emissions on global surface temperature by a factor of 3-4 over a 20-year time horizon (Lynch et al., 2020, their Figure 5), while understating the effect of any new methane emission source by a factor of 4-5 over the 20 years following the introduction of the new source (Lynch et al., 2020, their Figure 4)."

Given that GWP100 is unfit for purpose to compare the cumulative warming impact of short and long-lived emissions, it is appropriate that governments either adopt a more fit-for-purpose metric or split out reduction targets and budgets for short and long-lived emissions. The IPCC says, "treating short and long-lived GHG emission pathways separately, can improve the quantification of the contribution of emissions to global warming within a cumulative emission framework, compared to approaches that aggregate emissions of GHGs using standard CO2 equivalent emission metrics."

As Myles Allen, Professor of Geosystem Science, University of Oxford, and an expert on greenhouse gas metrics has said recently, "Given only targets for aggregate CO2equivalent emissions, without any indication of how much of these consist of methane and whether methane emissions are expected to go up or down, we have no way of telling whether they imply warming speeding up or slowing down. It's like trying to land a plane with a faulty altimeter."

Aggregating emissions budgets and using the GWP100 metric for short-lived gases is disingenuous.



#### Page 18, Figure 2 New Zealand's pathway to Carbon Zero

DairyNZ agrees with the purpose as it relates to 'global effort to limit warming.' This is not just about greenhouse gas emissions, but the warming impact of those emissions that is different for each gas type.

Carbon dioxide dominates not only the overall level of global warming but also the speed of global warming. Early global methane reductions can at best shave a few tenths of a degree off peak global warming and slow the rate of global warming a little.

We have domestic targets that allow us to work out how much warming New Zealand will cause, and this implies that if we achieve the mid-range of our legislated target range for biogenic methane, and net zero long-lived gases by 2050, then New Zealand will stop our warming in the 2030s, earlier than the United Kingdom, the EU and the US.

An evidence-based approach should not only report greenhouse gas emissions, but also the warming impacts of those emissions. In pursuit of a global temperature goal, it is important for both the other principles proposed here, and future policies, that New Zealand understands when its contribution to warming is halted.

DairyNZ seeks that the target range specified for biogenic methane by 2050 is 'fair' and 'equitable' given the warming impact of methane as measured by an appropriate metric for short-lived gases.

# Page 22: Guiding Principles – Q1 Do you agree that the emissions reduction plan should be guided by a set of principles?

Page 20, Table 5 provides "Guiding principles for Government decisions on the emissions reduction plan."

"<u>A fair, equitable and inclusive transition</u>" - DairyNZ seeks to understand how the Government will determine 'fairness' and 'equity,' and by what metrics or criteria will different policies be judged against one another? This principle, as expressed, is so broad that a multitude of policies completely unrelated to greenhouse gas emissions reductions could be justified (the latter point is reinforced by the third principle of "Environmental and social benefits beyond emissions reductions" i.e. the 'emissions reduction plan' which is about 'emissions reductions' can comprise policies that don't contribute towards emissions reductions). The current scope of this principle seems too broad and ambiguous without being supplemented with additional criteria, so that political trade-offs are made explicit.

DairyNZ supports the principle of "<u>An evidence-based approach</u>." An evidence-based approach should not only report greenhouse gas emissions, but also the warming impacts of those emissions. In pursuit of a global temperature goal, it is important that New Zealand understands when its contribution to warming is halted. Can the Government clarify, according to proposed budgets, when this will occur?

The principle of "An evidence-based approach" needs to draw on the latest findings of the IPCC.



We wish to ensure that the National Greenhouse Gas Inventory reports not just greenhouse gas emissions but also their warming impacts. DairyNZ also wants the National Greenhouse gas Inventory to be responsive and take account for new mitigation options and technologies as they emerge.

The principle of "<u>A clear, ambitious and affordable path</u>" is the first indication of cost and perhaps economic efficiency? There is an obvious tension between 'ambitious' and 'affordable.'

In terms of affordability, a least cost approach can help. Not employing a least cost approach means higher than necessary costs for families and businesses, making the transition to lower emissions more expensive and painful than it needs to be.

Least cost emissions abatement through the ETS can be supported by policies that address other unpriced externalities. But these are exceptions that need to be justified by additional net benefit assessments.

In a policy process it should almost always be assumed the least cost option is the best option unless it can be shown not to be. Where a public policy option is not least cost, the Government must ensure transparency to show, for example, the actual abatement costs per tonne of  $CO_2$  avoided.

DairyNZ wishes to see more discussion/guidance on what is 'affordable' and how that is determined prior to agreeing policies and evaluating their performance over time. For example, the Government has just announced a more ambitious 2030 target that will require purchasing international offsets estimated at many billions of dollars. What is the opportunity cost of spending that money in the domestic economy to reduce gross emissions?

# Page 23, Q5. Are there any other views you wish to share in relation to the Transition Pathway?

DairyNZ agrees that New Zealand should create sufficient certainty while maintaining flexibility for future decisions-makers.

New Zealand is reliant on other nations curbing their own greenhouse gas emissions. New Zealand essentially imports its climate from what others are doing or not doing. We are hopeful that others will act in step, but this is not guaranteed. We are keen to see the scenario planning that the Government has undertaken that investigates what New Zealand would do under a range of scenarios where the rest of the world either acts or does not act on climate change.

Similarly, how adaptive is New Zealand's transition pathway in respect of how resources will be allocated across both mitigation and adaptation where the rest of the world either acts or does not act on climate change?

# Page 30, Equitable Transitions Strategy: Q18 What additional resources, tools, and information are needed to support community transition planning?

DairyNZ seeks that the 'Equitable Transitions Strategy' is 'rural-proofed.' What will be the impact of the transition on rural communities<sup>1</sup>?

<sup>&</sup>lt;sup>1</sup> See <u>Rural communities at heart of all decisions | Beehive.govt.nz</u>



There was very little information on distributional impacts for rural communities in the Climate Change Commission's carbon budgets work.

We seek more information on the distributional impacts of the proposed pathway, particularly for the agriculture sector. We support a strong evidence base for assessing the distributional impacts of climate policy decisions and developing localised transition plans for affected regions. Further evidence is needed on the combined effects of carbon pricing, changes to transportation, heat and energy, and land use change on the agricultural sector and rural communities.

DairyNZ supports the Government improving digital connectivity for our rural communities. This will help support rural communities to be able to make use of technology as it arises and will support emissions reductions. Our recent farmer survey revealed that 50% of farmers don't have the broadband internet they need on-farm and 52% don't have adequate mobile reception. The Climate Change Commission recommended the rural Broadband Initiative is resourced and prioritised to achieve its 2023 target, so that farmers and rural communities have access to data and information to support decision-making.

The decarbonised future will increasingly be electric, and therefore there must be reliable and adequate distribution networks and distributed energy resources in the regions. Coverage of charging infrastructure, including fast-charging services, needs to be planned to consider regions, as well as State Highway networks.

#### Page 32: Government accountability and coordination

DairyNZ recommends that the Government, in a timely manner:

- Publish all briefings and minutes from the Climate Change Response Ministerial Group.
- Publish all briefings and minutes from the Climate Change Chief Executives Board.
- Publish annually the quantified costs and benefits of aligning government procurement of goods and services e.g. dollars saved, emissions avoided, cost per tonne CO<sub>2</sub> achieved.
- Regularly publish progress with the Carbon Neutral Government Programme e.g. dollars saved, emissions avoided and cost per tonne of CO<sub>2</sub> achieved.

# Page 34, Q21 In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

DairyNZ believes there should be increased accountability for actions and expenditure by government departments commensurate with any increases in Budget Appropriations. The Government has indicated that the release of the final Emissions Reduction Plan will coincide with Budget 2022. The assessed funding requirements for implementing each emissions reduction plan should estimate the costs and benefits. The cost per tonne of carbon should be calculated for each policy. All policies should be routinely evaluated for their effectiveness to reduce emissions - this information should be communicated publicly, and regularly. If a least cost principle is to be abandoned, then the transparent reporting of this information makes clear the trade-offs and opportunity costs of these investments.

# Page 36, What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?



DairyNZ believes that setting a clear strategy for science funding that is appropriately resourced will support farmers to reduce their environmental footprint while increasing profit. The long-term plan for funding (as recommended by the Climate Change Commission) should be expedited to provide clarity and certainty.

*New Zealand Green Investment Finance* is a green investment bank established by the New Zealand Government in April 2019 to accelerate investment that can help to reduce greenhouse gas emissions in New Zealand. The Agriculture sector is one of the target sectors for the Bank. To date, what proportion of the Bank's funding has been committed for the agriculture sector?

This question is cross-referenced with Page 46 Research, Science and Innovation below.

# Page 40, Question 30: Do you agree the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

There should be greater consideration to the consequences of afforestation policies where wholesale conversion to forestry and the scale of afforestation risks the effectiveness of policy drivers to reduce gross emissions. Long-lived gases remain the key drivers of climate change.

The pace of afforestation on farms around the country and the influence of government policies to drive afforestation is clear. We look forward to the Government responding to the clear guidance and concerns of the Climate Change Commission in this regard, this is repeated below for reference.

The Climate Change Commission's Advice to the New Zealand Government on its first three emissions budgets and direction for its emissions reduction plan 2022–2025 recommended the following (in Recommendation 11 and 25 on pp.243 and pp. 323 respectively):

"Amending the NZ ETS to strengthen the incentive for gross emissions reductions and to manage the amount of exotic forest planting the NZ ETS drives, in line with the Commission's advice on the proportion of emissions reductions and removals necessary for meeting emissions budgets (see also Recommendation 25)."

*"Designing a package of policies to reduce reliance on forestry removals and manage the impacts of afforestation including:* 

- Amendments to the NZ ETS to manage the amount of exotic forest planting driven by the scheme (see also Recommendation 11 on the NZ ETS).
- A clear position on the role and desirability of different types of permanent exotic forests as carbon sinks and amending the NZ ETS and other policies accordingly.
- Land-use planning, direction and tools to help local government manage afforestation, mitigate localised impacts of afforestation and to achieve environmental co-benefits."



#### Page 46, Research, science and innovation: Questions 36-41

The Government and agricultural industry sector bodies, including DairyNZ, continue to invest via the Pastoral Greenhouse Gas Research Consortium and New Zealand Greenhouse Gas Research Centre (NZAGRC) to research and develop technologies to reduce biological methane and nitrous oxide emissions.

For the dairy sector to maintain our international competitiveness, reduce our environmental footprint, and make a greater contribution to New Zealand's economy we need a more strategic approach to greenhouse gas research and development. It will not be possible to meet long-term targets for biogenic methane without very large financial costs to dairy farms and the dairy sector unless the breakthrough technologies under development come to fruition.

The current research system isn't working. It's costly, cumbersome, and misplaced incentives prioritise piecemeal projects at the expense of long-term vision and coordinated effort. The result is a splintered system driving mostly short-term and disconnected projects, with low accountability for impact.

DairyNZ welcomes MBIE's current consultation on the future of the science system in New Zealand. Minister Woods has said "We need a future-focused fit for purpose research, science and innovation system to safeguard our future health, environment and prosperity."

We need to apply a long-term strategic lens to our research sector so that the critical questions can be addressed. The big challenges we are facing like improving water quality, reducing emissions, and adding value to milk, require substantial, coordinated and consistent long-term research investment. This investment should be based on a shared strategy that brings together the expertise of our best researchers to achieve our collective economic, social, and environmental aspirations.

The biggest impact New Zealand can have in tackling global emissions will be through its contribution to efforts to reduce global livestock emissions which account for around 14% of all global emissions.

Setting a clear strategy for science funding that is appropriately resourced will support farmers to reduce their environmental footprint while increasing profit. The long-term plan for funding should be expedited to provide clarity and certainty.

Under the Biological Emissions Reduction Science Accelerator, DairyNZ is working alongside Government, industry, Māori and the science sector to develop a shared R&D plan. Good progress is being made to identify how to accelerate mitigations to reduce methane and nitrous oxide emissions on-farm. However strong funding commitment is needed from Government to ensure that these actions are operationalised.



|   | Transport sector | Agriculture sector |  |  |
|---|------------------|--------------------|--|--|
| Government funding for                    | \$36.2m per year | \$32.5m per year   |  |  |
| emissions reductions                      |                  |                    |  |  |
| % of New Zealand's gross                  | 20%              | 48%                |  |  |
| emissions (CO <sub>2</sub> <sup>e</sup> ) |                  |                    |  |  |
| Government funding per                    | \$2,200 per year | \$820 per year     |  |  |
| kt CO <sub>2</sub> <sup>e</sup>           |                  |                    |  |  |

#### Table 1: Current funding for emissions reductions from Government

#### Government's new 2030 Nationally Determined Contribution (target)

At the UN Conference in Glasgow this month the Government announced a new climate change target to reduce net emissions by 50 per cent below gross 2005 levels by 2030. This more ambitious target commits New Zealand to purchasing international units because sufficient abatement is not available within the domestic economy to cover this increase over the period. The costs of offshore mitigation have been estimated by the Government at \$900m - \$1.5b per annum.

Based on the Climate Change Commission's recent advice to Government, and their assessment that increasing the 2030 target will simply lead the Government having to pay internationally for units - a 50% reduction by 2030 implies the need for 142 Mt CO2e of international offsets.

This equates to the following costs (both direct and indirect<sup>2</sup>) over next 9 years, at different carbon prices:

| Price per t CO2e                          | \$30    | \$70     | \$140    |
|---|---------|----------|----------|
| Direct cost<br>(Billions)                 | \$4.2 b | \$10.0 b | \$19.8 b |
| Direct and<br>Indirect cost<br>(Billions) | \$7.6 b | \$17.8 b | \$35.8 b |

#### Table 2

It is useful to compare the current Government expenditure to reduce New Zealand's gross greenhouse gas emissions and its current commitment to research and development, with the above (direct and indirect costs) to the economy of purchasing international offset units – there is an order of magnitude difference.

Earlier this year the Climate Change Commission and the Sustainable Business Council called on the Government to develop and fund a long-term R&D strategy for agricultural greenhouse gas emissions. DairyNZ strongly supported this in our submission to the Commission.

At the UNFCCC Conference of the Parties meeting in Glasgow this month, the Government also signed a collective, global methane pledge. While Minister Shaw

<sup>&</sup>lt;sup>2</sup> "Indirect costs" as defined by the Climate Change Commission are - The overall economic impact of expenditure on offshore mitigation will be greater than the purchase price (the direct cost), due to multiplier effects. Were an equivalent amount to be spent within Aotearoa, it would have a knock-on effect stimulating spending in downstream industries. With offshore mitigation these knock-on effects occur overseas, and so Aotearoa would not get these benefits."



confirmed that no policies or domestic targets will change as a result of signing the methane pledge, the pledge does call for *"technology innovation, incentives and partnerships"* in respect of agricultural methane.

A robust R&D strategy is the most important thing New Zealand could be doing right now as part of a global effort and we urge the Government to make this a significant priority. Scientific breakthroughs on agricultural greenhouse gases won't just help kiwi farmers – it will help farmers worldwide.

#### Page 76, ultimate paragraph: Transport distributional Impacts

This paragraph refers to mitigating the distributional impacts on different sectors and industries. The Climate Change Commission's first carbon advice was notable for the absence of any in depth information on distributional impacts. DairyNZ supports the publication of good evidence of the distributional impacts of transport policies on the agriculture sector and rural communities.

## Page 81, Transport: Q57: Are there any other views you wish to share in relation to transport?

We are pleased to see that the transport sector is taking a leadership role in reducing New Zealand's all-important long-lived emissions. Transport is responsible for 47% of total domestic long-lived gases.

There needs to be further consideration of the impact of transport policies for rural communities. Regions, sectors, and citizens all have different starting points in their journey to a low-emissions economy.

This is acknowledged on page 78 of the discussion document "We have acknowledged in these estimates that more rural areas have limited opportunities to reduce light vehicle travel."

Options to decarbonise transport emissions are unlikely to be readily applicable in rural areas any time soon. Public transport and non-vehicle travel options are likely to be impractical options for farmers living in remote locations. Currently available EV options are not able to match the performance of internal combustion engine utes for on-farm needs.

As yet there are no low emissions options for tractors and other specialised farm machinery.

DairyNZ was pleased to see the Climate Change Commission acknowledged the specific transport needs of rural communities in the recent report "Ināia tonu nei: a low emissions future for Aotearoa". "Farmers, contractors and others in rural communities need vehicles that can carry heavy loads or access rugged or remote locations. Singleor double-cab Utes, farm bikes and quad bikes are an essential part of farming and rural landscapes. Cost-effective and low emissions solutions for these vehicles are available now or will be in the next few years."

The Climate Change Commission did not identify which and low emissions solutions it has looked at that are available now, which will be cost effective and available in three years' time. We would welcome the Ministry for Transport and the Government to give more detail on this aspect. We also recommend further research is done on transport needs and patterns for rural communities, so that options can be developed with an evidence-base. We would encourage for pilots to be established.



#### Page 100, Agriculture specific questions

#### Support for He waka eke noa

DairyNZ is a partner and signatory to He Waka Eke Noa. This is a Primary Sector Climate Change Commitment with Government and iwi/Māori. Through He Waka Eke Noa, partner organisations are working to develop a framework by 2025 that will equip farmers and growers with both skills and tools to reduce their on-farm agricultural greenhouse gas emissions and to adapt to climate change.

The agriculture sector is invested to ensure He Waka Eke Noa delivers practical guidance to farmers. Advisory and guidance tools can enable better on-farm decisions leading to reduced greenhouse gas emissions. Farmers also want to be recognised for their achievement of on-farm emissions reductions.

He Waka Eke Noa decisions and actions must be enduring to provide business certainty.

The Government should ensure that on-farm actions to reduce emissions flow through to the National Greenhouse Gas Inventory.

He Waka Eke Noa presents a framework for farmer-driven action that could be used internationally by other nations seeing to address their own agricultural greenhouse gas emissions.

## Q83, How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?

The Government could incentivise support for farmers to join Dairy Base - paying for data collection and incentivising farmers to participate. Dairy Base is a service provided by DairyNZ for farmers who subscribe. It helps farmers to better understand their farm system. It does this by comparing key performance indicators and determining opportunities for improvement.

With Government support to make it accessible to all dairy farmers it will help farmers to understand their business financial performance and the farms physical aspects, compared to industry standards or targets.

The Government could also incentivise other database holders to bring their data across to Dairy Base. We would then be able to show more farmers where they sit relative to others, to amplify understanding, options and build on practice changes.

# Q84 What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

There is little time between now and 2025 when the pricing of agricultural greenhouse gases is to be operational. Commitment to a well-funded, robust research and development programme will give confidence that mitigation solutions are on the horizon. Similarly, information and guidance will help prepare farmers, so they that they know their greenhouse gas numbers, have a management plan and knowledge of the options they can take. Public policy needs to be well signalled, have practical application and be fair. If there is not bi-partisan support to climate change policies or



the goal posts continually shift, this will likely pause action and dent confidence. We note that there are signals from the market too, but getting the regulatory environment correct is as equally important.

# Q85 What research and development on mitigations should Government and the sector be supporting?

See the above section on Research, science and innovation.

# Q86 How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

New Zealand's food & fibre sector is committed to being the most efficient producer of low emissions, high quality, and safe food & fibre in the world. Our focus as a sector is sustaining our success, as consumers and communities increasingly seek sustainably produced food. New Zealand farmers' hard work and investment over decades has contributed to this world-leading status. Our unsubsidised grass-based, outdoor grazing system is unique globally and is critical to our success.

New Zealand continues to pursue and should amplify its research and development of agricultural greenhouse gas emissions. The Ministry of Foreign Affairs and Trade, the Ministry for Primary Industries and the Ministry for the Environment should highlight New Zealand's research and development efforts, including our coordination of the Global Research Alliance. We should also seek to partner with other countries.

The Government should also showcase *He Waka Eke Noa*. DairyNZ is a partner and signatory to *He Waka Eke Noa*. This is a Primary Sector Climate Change Commitment with Government and iwi/Māori. Through *He Waka Eke Noa*, partner organisations are working to develop a framework by 2025 that will equip farmers and growers with both skills and tools to reduce their on-farm agricultural greenhouse gas emissions and to adapt to climate change. *He Waka Eke Noa* presents a framework for farmer-driven action that could be used internationally by other nations seeing to address their own agricultural greenhouse gas emissions.

The Government has recently joined the Global Methane Pledge. For Agriculture this calls for *"technology innovation, incentives and partnerships."* 

#### Submission ENDS

| From:    |  |
|----------|--|
| Sent:    |  |
| То:      |  |
| Subject: |  |

Tuesday, 23 November 2021 7:48 pm climateconsultation@mfe.govt.nz Agriculture submission

To whom it may concern,

I am a 35yr old farmer from the east coast of New Zealand. I believe climate change is a problem and we all need to fix it.

what should've happened from the start is it should have been put out to farmers is that there are two ways we can meet our emissions reduction plan; We can sell off good productive farmland and blanket plant in pine trees, or we can work with you guys (farmers) individually and select less productive land and plant those areas. Ideally in native and not pine - more science needs to be done on carbon sequestration on native forests, I've heard the dollars figures from someone in Scion regarding this carbon sequestration Natives vs Pine and its embarrassing - biodiversity clearly not at the top of the govts list.

You have gone with option one - a knee jerk, easy options that is having catastrophic effects and will into the future. Our beautiful farms and countryside is getting brought up by companies (a lot of overseas) so they can keep polluting. Why should our country be sacrificed, this is damaging our economy, our rural communities are disappearing, you are increasing the amount of unemployed people and sending profits overseas.

This is the ambulance at the bottom of the cliff planting more trees, why isn't there more time and money spent fixing the problem. Planting trees in NZ isn't going to fix the carbon produced overseas, in fact it endorses it !

As a side note, NZ produce the most healthiest and lowest carbon foot print meat in the world. Who is going to pick up the slack? A country that produces the meat with a larger carbon footprint.
| From:    | david monagan                      |
|----------|------------------------------------|
| Sent:    | Sunday, 21 November 2021 10:23 am  |
| То:      | climate consultation 2021          |
| Subject: | STOP planting pine trees on farms! |
|          |                                    |

### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

It is enough already, we are losing our distinctive country side, small communities are losing people and fire risk is getting bigger. we have been told over and over that the East coast will get drier under climate change, yet the govt insists on planting east coast farms in pine trees! wait 10 or 15 years and we will have fires like Australia, every ear will be a fire season as pine forests go up in flames, where will your sequestered carbon go then??? ups in smoke. If you insist on planting trees and replacing farms, at least plant natives and turn farms into parks . Forever forests of pine, are a disgrace to intelligent life!!! what stupidity!!!. The damage this policy is doing to NZ heartland is going to be long lasting, once these farms are gone, under pines, they wont be coming back.

To allow offshore companies to ofset their carbon emmissions by ruining our country is madness .

yours sincerely

David Monagan

| From:    | Debs Higgins                       |
|----------|------------------------------------|
| Sent:    | Sunday, 21 November 2021 10:35 am  |
| То:      | climate consultation 2021          |
| Subject: | Stop carbon offsetting on farmland |

MFE CYBER SECURITY WARNING This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments. Please limit the use of farmland to offset carbon emissions. If it continues unchecked as it currently is there will be no farmland left to feed anyone, AND the land will be unusable for 10 to 15 years, meanwhile people on the other side of the world continue to pollute the planet with abandon.



Attn: Emissions reduction plan consultation, Ministry for the Environment <u>Climateconsultation2021@mfe.govt.nz</u>

Dear Ministry for the Environment Emissions Reduction Plan team,

# EQC SUBMISSION ON THE EMISSIONS REDUCTION PLAN CONSULTATION DOCUMENT

Thank you for the opportunity to comment on the emissions reduction plan consultation document. This feedback letter provides:

- A. Background:
  - i. EQC's policy interest in climate change
  - ii. Alignment with EQC's work programme
- B. EQC's feedback on the Emissions Reduction Plan Consultation Document

### A. Background

#### *i.* EQC's policy interest in climate change

The Earthquake Commission Kōmihana Rūwhenua (EQC) is a Crown Entity investing in natural hazards research and education, and provides insurance to residential property owners from the impacts of natural hazards. EQC covers:

- residential property damage caused by a natural landslip, volcanic eruption, hydrothermal activity, tsunami, or natural disaster fire; and
- damage to land caused by a storm or flood.

Climate change will continue to exacerbate impacts from all of the natural hazards covered by EQC. These increased impacts will increase demand for EQC claims and pay-outs. Taking increased weather extremes alone, research from Motu<sup>1</sup> shows annual liabilities for EQC will likely increase between 1.6% and 18.1% as a result of climate change. This will necessitate at least an equivalent increase in premiums collected (and potentially more). The researchers note these figures could be underestimated.

This is likely to translate into higher damages and additional financial liability for EQC. The percent change between projected and past damages (the climate change signal), rises from 7% and 8% in 2020-40 to an increase of between 9% and 25% in 2080-2100, depending on

Earthquake Commission Level 11, Majestic Centre

<sup>&</sup>lt;sup>1</sup> <u>http://motu-www.motu.org.nz/wpapers/20\_02.pdf</u>

the Green House Gas (GHG) concentration scenario. Overall, liabilities will increase more if future GHG emissions are higher.

Additionally, Motu notes that the increase in projected EQC liabilities can also inform private insurers, reinsurers, regulators, and policymakers who are assessing the future performance of both the public and private insurers covering risks in the face of climate change.

The contingent liability associated with natural hazard risk in New Zealand is high and is carried by EQC on behalf of the Crown. Therefore, EQC has a crucial role in reducing risk from, and building resilience to, natural hazards and climate change in Aotearoa New Zealand. This is prevalent now more than ever, as extreme changes in weather patterns are increasing the demand for, and complexity of, EQC claims and pay-outs.

### ii. Alignment with EQC's work programme

The goal of the EQC Resilience Strategy<sup>2</sup> is to inform, enable and influence the choices and decisions that reduce vulnerability and the exposure of New Zealand's built environment to natural hazard events. The results we want to see are *stronger homes, built on better land, served by resilient infrastructure, supported by affordable risk capital.* 

To enable our resilience goal, EQC invests over \$22 million in research into natural hazard risks. Our Research Investment Priorities<sup>3</sup> include climate change as a "lens" to be considered in our research investments. EQC uses the research it invests in to drive action through national and regional policy, as well forming our work programmes and projects to support resilience building for all New Zealanders.

EQC is also developing two Action Plans to support our Resilience Strategy: a Smarter Land Use Planning Action Plan, and a Resilient Homes and Buildings Action Plan. These contain strong alignment with our recommendations below.

Work is currently underway to update the National Seismic Hazard Model, as well as preliminary work on any consequent changes required to building standards and performance expectations. These are closely related to the advice within this consultation document and we trust these initiatives will be integrated together at an appropriate time.

EQC is also investing in resilience measures to encourage sustainable investment decisions and to extend the serviceable life of properties, reducing carbon costs of demolition and rebuild. We are developing a Risk and Resilience to Portal that will address a critical strategic gap in our sector: the need for coordinated, centralised, curated risk information that can inform advice and practice, related to the hazards we face. EQC will leverage the data, information, analytics, and risk modelling we currently own or fund to develop a selfservice natural hazard risk information site tailored to multiple end-users. The Portal will drive risk-based decision making for the New Zealand public, key practitioners, and local and central government. EQC is also investigating ways to increase the uptake of property-based

<sup>&</sup>lt;sup>2</sup>https://www.eqc.govt.nz/sites/public\_files/documents/grants/EQC%20Resilience%20Strategy%202019.pdf <sup>3</sup>https://www.eqc.govt.nz/sites/public\_files/documents/Research/Research%20Investment%20Priorities%20Statement\_2021\_2 <u>023.pdf</u>

resilience measures, such as removing chimneys to prevent damage during an earthquake. These initiatives are also aligned with our recommendations below.

Please let us know if you would like further information on any aspects of EQC's work programme. We would be very happy to discuss any of these initiatives further with you, including their alignment to the draft advice provided in the consultation document.

### B. EQC's feedback on the Emissions Reduction Plan Consultation Document

## 1. EQC generally supports the content of the Emissions Reduction Plan consultation document.

For the reasons set out above, EQC agrees that Aotearoa needs to take further steps to align its actions with its targets to reduce emissions. This is needed not only for a cleaner, greener, healthier and more sustainable future, but also for a safer and more resilient New Zealand. This will ensure the hazards we face are less likely to become disasters that threaten our prosperity and wellbeing.

2. EQC strongly supports emissions reduction actions that reduce natural hazard risk as a co-benefit.

It is encouraging that much of the advice in the consultation document is beneficial for managing natural hazard risk, as well as reducing the impacts of climate change. For example, establishing new native forest on steeper, less productive land will also reduce the risk of landslides and flooding.

| p. 23 | Amend the statement 'The first National Climate Change Risk Assessment<br>presented the first national picture of the risks Aotearoa faces', as this is in<br>incorrect. A comprehensive national risk assessment, for all hazard risks, is<br>overseen by the Hazard Risk Board. It is recommended that this statement is<br>amended to 'the first national picture of <b>climate</b> risks'. |
|-------|--|
| p. 24 | EQC strongly supports the statement that 'To build for climate change we must put the right structures in the right places.'   |
| p. 24 | EQC strongly supports the recommendation to use forestry to also provide opportunities to reduce hazard risk, including erosion, landslips, and flooding.  |

### 3. EQC requests that natural hazard risk is included within the guiding principles of the Plan.

Aotearoa New Zealand faces some of the greatest natural hazard risks of any country in the world. Reducing natural hazard risk reduces the carbon cost of natural hazard events, as outlined below. Including natural hazard risk reduction as a guiding principle will therefore assist with reaching the goal of the Plan.

| Table 5, | Within 'A fair, equitable and inclusive transition', point 3, 'minimise and avoid |
|----------|---|
| р. 20    | the negative impacts, and social and environmental risks, of the transition and   |
|          | specific policies, including avoiding:' add:                                      |
|          | <ul> <li>increasing natural hazard risk.</li> </ul>                               |

4. EQC requests that the Plan defines "resilience" as described in the New Zealand Government National Disaster Resilience Strategy<sup>4</sup>. The consultation document uses a very narrow definition of "resilience", limiting this exclusively to climate change. This precludes opportunities for increasing wellbeing through co-benefits, including increasing resilience to natural hazards. Similarly, it is recommended that the transition is aligned to the priorities within the National Disaster Resilience Strategy.

| p. 22  | Under "Aligning the transition with other priorities", it is recommended that the Plan is aligned to the priorities within the National Disaster Resilience Strategy. |
|--------|---|
| p. 130 | Define "Resilience" as described in the New Zealand Government National Disaster Resilience Strategy.   |

# 5. EQC requests that the Plan incorporates natural hazard risk into calculations for any embodied carbon 'cap', and that the whole-of-life carbon costs of buildings should be considered within these calculations.

Building materials such as steel and cement enable stronger buildings and reduce damage in a natural hazard event. While these can involve the building having a slightly greater carbon footprint at construction, they can overall reduce the carbon impact; they also reduce the carbon cost of building repairs, retrofitting, premature demolition, and rebuilding. We have provided a case study from the Canterbury Earthquake Sequence in Appendix 1.

It is important to get the right balance between these competing priorities. For example, research in the United States indicates that adding 10% to the steel content of a commercial building can add about 50% to the seismic load carrying capacity of a building, yet only adds 1% to the carbon cost of the building<sup>5</sup>.

EQC supports the use of, and is actively funding research on the development of, greener construction materials and techniques. However, at present, equivalents to steel and cement remain rare, and reducing the use of steel and cement in the construction process, before viable alternatives are available, will compromise the strength of buildings.

Increased resilience to natural hazards, through adding a small embodied carbon cost at the design, construction, and retrofitting stages of building, provides a substantial reduction in potential life cycle embodied carbon costs in high hazard countries such as New Zealand. Doing so avoids wide scale but periodic demolition and replacement carbon costs, as well as impacts to communities (similar to those seen in Wellington after the 2016 Kaikōura-Hurunui earthquake).

<sup>4</sup> <u>https://www.civildefence.govt.nz/assets/Uploads/publications/National-Disaster-Resilience-Strategy/National-Strategy/National-National</u>

| p. 91 | Regulatory proposals to implement emissions caps for buildings should consider natural hazard risk, and the whole-of-life implications of embodied carbon, relative to premature demolition.  |
|-------|---|
| p. 92 | EQC supports the aim to reduce emissions in existing buildings.   |
|       | EQC is currently investigating ways to increase the uptake of property-based resilience measures, such as removing chimneys to prevent damage during an earthquake. Investing in these resilience measures will extend the serviceable life of properties, reducing carbon costs of demolition. |
|       | EQC strongly support retrofitting buildings to increase their resilience to natural hazards remaining in the scoping options, and is happy to offer assistance in this area if this would be helpful.   |

# 6. EQC requests that the Plan states that urban intensification and infrastructure investment should not occur in, or towards, areas with high natural hazard risks.

Intensifying development in hazardous areas (e.g. flood plains, active faults, volcanic fields, coastal hazard zones, and land susceptible to land instability) results in greater risk to our communities. Similarly, new infrastructure should not encourage new development in areas of high natural hazard risk. Both increase greenhouse gas emissions, as the buildings and infrastructure will need to be replaced prematurely due to being impacted by natural hazard events (as outlined above).

This should also include ensuring opportunities are taken to reduce natural hazard risk. Discussion around the replacement of the Interislander ferry terminal in Wellington provides a timely example where the option to locate away from a high-hazard area may not be chosen. This may result in higher carbon use, due to the need for a stronger structure with greater use of high-carbon materials, and subsequent repairs and earlier demolition. KiwiRail currently intends to rebuild the Interislander ferry terminal in the same location. This would miss the opportunity to re-site the terminal away from the Wellington Fault. Moving the ferry terminal to a second proposed location (which is supported by CentrePort, Wellington City Council, and Wellington Regional Council, along with other harbour users) would move the terminal away from the fault. As outlined above, relocating the terminal to the proposed location, would not only reduce emissions in the long-term, but have resilience benefits also.

p. 40 Under "Planning", state that urban intensification and infrastructure investment should not occur in, or towards, areas with high natural hazard risks.

EQC would be happy to discuss any of the above submission. Please feel free to contact me at the address below.

With kind regards,



**Chief Resilience & Research Officer** 

### Appendix 1

### Embodied carbon case study from the Canterbury Earthquake Sequence

The Canterbury earthquake sequence provides a case study of the carbon impact from reconstructing after a natural hazard event. In March 2011, the government indicated about 10,000 earthquake-damaged homes would need to be rebuilt<sup>6</sup>. These homes were replaced. In the seven years to September 2017, 36,431 new homes were consented in Canterbury. This was up more than 10,000 when compared with the seven years pre-earthquakes, when 25,913 homes were consented<sup>7</sup>.

Further, 1,240 commercial buildings were demolished within the central city<sup>8</sup>, to be replaced by an estimated 900<sup>9</sup> new commercial buildings in the central business district.

We note additional buildings were demolished, including university and hospital buildings, commercial and industrial buildings outside the central city, and churches. These buildings generated additional carbon cost, as did demolished infrastructure such as roads and bridges.

A standalone house with a floor area of 200m<sup>2</sup> has embodied carbon of approximately 63 tonnes carbon dioxide equivalent over its 90-year life.<sup>10</sup> Technical advice indicates 55% of this carbon is embodied at construction, 5% at end of life (waste), and 40% through maintenance throughout the life of the building.

A non-residential building with a floor area of 900m<sup>2</sup> has embodied carbon of approximately 450 tonnes carbon dioxide equivalent<sup>11</sup>. Larger buildings may embody up to five times this amount. 91% of this carbon is embodied at construction, 4% at end of life (waste), and 5% through maintenance throughout the life of the building.

The carbon cost of the Canterbury earthquakes includes:

- embodied carbon "forgone" as the lifetime of buildings was drastically reduced. For example, if a building was built in 2000 with a 90-year life span but demolished in 2010 after the first earthquake, 80 years of embodied carbon is effectively wasted. Or, to put it differently, 90 years of embodied carbon at the construction phase was effectively invested for only 10 years of benefits.
- The operational emissions involved in demolition. For example, fuel burned in the operation of heavy machinery.
- The cost of rebuilding the new buildings.
- The carbon embodied in maintenance throughout the lifetime of the new buildings.

Based on these numbers, the rebuild of greater Christchurch may have generated well over 1 million tonnes of carbon dioxide equivalent, comprising:

• 630,000 tonnes carbon dioxide equivalent from the rebuild of 10,000 houses.

<sup>&</sup>lt;sup>6</sup> <u>https://www.beehive.govt.nz/release/around-10000-houses-will-need-be-rebuilt</u>

https://www.stats.govt.nz/assets/Reports/Canterbury-the-rebuild-by-the-numbers/Canterbury-the-rebuild-by-the-numbers.pdf
 http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/66290638/1240-central-christchurch-buildingsdemolished

<sup>&</sup>lt;sup>9</sup> https://www.buildmagazine.org.nz/assets/PDF/Build126-34-Christchurch-Rebuild.pdf

<sup>&</sup>lt;sup>10</sup> http://www.level.org.nz/material-use/embodied-energy/

<sup>&</sup>lt;sup>11</sup> https://www.nzgbc.org.nz/KNOWLEDGEHUB/Attachment?Action=Download&Attachment\_id=2437

- 405,000 tonnes carbon dioxide equivalent from the rebuild of 900 commercial buildings.
- More carbon dioxide equivalent for the other buildings and infrastructure not covered in the previous two dot points.
- The other costs noted above.



### Submission on draft Emissions Reduction Plan

From Ecologic Foundation, 24 November 2021

To: Ministry for the Environment By email: <u>climateconsultation2021@mfe.govt.nz</u>

#### INTRODUCTION

1. The Ecologic Foundation and its predecessor the Maruia Society have been involved in climate policy since 1988 when a staff member was first assigned to work in this area. For the Climate Change Commission (CCC) consultation earlier this year, we convened a group of scientists and public policy professionals, styled as the Tahuna Group, to prepare a <u>major submission</u>. This focused mainly on three areas where the CCC's thinking seemed to us to be deficient: transport, agriculture and forestry. In general, we think the transport chapter of the ERP is a great improvement on the CCC's work, albeit recognising the difficulties of achieving substantial early results in this policy area (further improvements could be made, and we are aware of a plethora of good ideas being submitted by others).

2. In this submission, we have chosen to focus on agriculture and forestry, along with implications for the transition pathway itself. We are bearing in mind that the main policy and consultation work in agriculture and forestry will be carried out during 2022 for decision-making after the rest of the ERP is finalised. We are also bearing in mind that 'the rest of the ERP' offers limited scope for effecting timely reductions (ie in the current decade) if we are to improve the share of our NDC that is met domestically and/or at lower cost than purchasing offshore credits. This suggests that the land-based sectors will have to take on much more responsibility than they have so far. Given our focus on these sectors, our submission at this stage is high-level and brief. Our thinking is guided by two key propositions:

Given the failure of COP26 to deliver any credible commitment to a 1.5 degree world, urgent cuts in methane emissions, including biogenic methane, must now be achieved if important tipping points are to be avoided. The methane challenge has grown enormously in its significance since NZ's zero-carbon legislation was enacted, as outlined in the Tahuna Group submission referred to and linked above. The CCC subsequently advised us that, in the time available, it was unable to assess the peer-reviewed analysis we provided of the scientific literature on the destabilisation of the West Antarctic ice sheet and the disproportionate influence of methane emissions on this outcome. Since then, several more scientific and policy papers have reinforced the importance of early, precautionary action on this issue.<sup>1</sup> From a global perspective, rapid methane reductions, additional to carbon reductions

<sup>&</sup>lt;sup>1</sup> See for example <u>here</u>, <u>here</u> and <u>here</u>.

already committed, are now the only credible way to avoid imminent tipping points. This is mainly because of the powerful short-term reduction in the rate of cumulative warming of the Southern Ocean which is uniquely offered by curbing methane. The Government has signed the Global Methane Pledge, <u>although it intends no change to existing policy as a</u> <u>result</u>, and thus is <u>shoving off any responsibility for fresh actions on to other countries</u>. The methane issue is destined to grow dramatically during the current decade and for this reason at least, as a matter of prudent risk management in trade relations, politics and global environmental well-being, the Government needs to review the approach it has been taking to date.

This leads to our second key proposition: that climate policy is in effect, national • development strategy, and needs to be analysed as such. The development strategy the Government has been pursuing focuses on the maintenance and expansion of emissionsintensive industry sectors. This strategy uses imposts on households, motorists and small businesses to cross-subsidise livestock-based agriculture, and a handful of other emissionsintensive industries. Ever since the establishment of the Working Group on CO2 Policy in the mid-1990s (of which the drafter of this submission was a member) the Government has contrived to ignore that half of the nation's emissions that is sourced from agriculture. Importantly, it seems to us to have done so for purely political reasons, rather than as a result of proper strategic analysis. As the then-Minister said at the time, the Government did not want to take on the farming lobby; that would have to be done at a later stage. That has remained the instinctive position of successive governments over the subsequent 25 years. We have seen unparalleled feats of primary sector political leverage but a dearth of serious policy analysis around whether an emissions-intensive development pathway is in the national interest. What is now needed, in our view, is a proper, independent analysis of the options facing New Zealand around development strategy, and an invitation for public comment on these options. This is what we should be able to expect from New Zealand's public service. Below, we discuss two key pathways for the suggested analysis.

#### **RESPONSES TO SELECTED QUESTIONS**

#### **Question 1 – on policy principles**

The whole section on "Transition pathway" (pages 19-24) seems well-conceived but there is a problem with the large gap between this section and the privileging of agriculture embodied in the current methane targets. For example:

- In Table 5, the reference to 'avoiding exacerbating existing inequities' is completely inconsistent with the long term grandparenting of privileges to livestock agriculture, and the associated operation of the ETS in a way that ensures its main effect is not to reduce emissions but to transfer wealth from households, motorists and small businesses to farmers and other politically privileged emitters.
- Under 'Having the right mix of actions' the statement that "Emissions pricing through the NZ ETS provides an economy-wide financial incentive to reduce emissions" is inconsistent with the reality that most of the emissions covered by our NDC are either exempted from pricing or granted free of charge on a grandparenting basis; even the exposure of a tiny fraction of an enterprise's emissions to a marginal price, while useful for discouraging expansion of emissions, is not on the evidence going to drive the large-scale reductions required this decade.

• The objective stated in Table 5 to 'minimise and avoid' virtually all negative impacts makes the stated principle meaningless as it rules out the hard strategic choices that have to be made, including the major challenge of driving behaviour change by emitters. The word 'avoid' has a strong meaning (eg in RMA jurisprudence) and should be used carefully.

We suggest that the word 'avoid' should not be used in relation to adverse effects where it serves to frustrate the purpose of emissions reduction. Minimising adverse or unintended effects is a more appropriate objective.

We also suggest that a sixth principle be added on the theme of 'Emphasizing behaviour change.' Examples validated by international evidence should be included for this principle, such increased use of public and active forms of transport, reduced meat eating, and widespread land use change toward low-emitting or high-sequestration activities. Reliance on some future assumed technological progress will not be sufficient in our present circumstances.

#### Question 2 - on barriers to decarbonisation

The use of the term 'decarbonisation' is a northern hemisphere framing which is not appropriate in a country like New Zealand where only half our emissions are carbon dioxide, and where a major challenge is presented by cultural traditions of rent-seeking, dodging of responsibilities and shifting them to others.

It is obvious that in New Zealand, the biggest barrier to emissions reduction is the political granting of grand-parented privileges to special interests. There is huge experience of this in freshwater policy and the same syndrome inflicts climate policy. A key handmaiden of the grandparenting game is the fostering of beliefs – often for decades on end – that some technological silver bullet is just around the corner, meaning that we all just need to wait a bit longer while the polluters carry on doing their thing.

The ERP needs to spell out the need for precautionary action, especially via the creation of net-zero emission reduction obligations, rather than allowing polluters to continue waiting around for technology while accruing valuable gains in land value from delayed action, and/or from grants of free emissions units which they can cash in later. Sustaining such patterns of behaviour has been the mainstay of climate policy in New Zealand to date.

### Question 86 – How could the Government help industry and Maori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Meat and Livestock Australia show the way to do this – see <u>here</u> and <u>here</u>. The key is to have the capacity to make climate-positive product claims based on independently verified emissions reductions, including (where emissions cannot be further reduced at present), through the on-farm provision or purchase of credits for nature-based solutions, leading to the delivery of net-zero or climate-positive outcomes.

In New Zealand, Silver Fern Farms is well advanced on this track, and it is offering premiums to suppliers for climate-positive supply. This is the medium-term model for the New Zealand primary sector as a whole, and it would allow urban and rural communities to be unified in their support for promoting New Zealand as a genuine source of climate-neutral exports, especially in the food and textile industries with their currently huge emissions footprints.

However it is understandably difficult to move the majority of farmers on to this track when the Government is offering an alternative pathway, via an already-outdated piece of legislation that focuses on zero carbon while allowing most methane reduction requirements to be deferred beyond the lifetimes of most farmers; and which even then, excludes methane reductions from eligibility for netting-off, even though this facility is available for carbon dioxide and nitrous oxide.

Article 6 of the Paris Agreement as elaborated at COP26 allows space for developing a viable and credible international market in climate neutral products, although in New Zealand much will depend on whether the Government actually encourages the practice. There are two main barriers. First is the conflicted role which the Government plays as an interested party, through its desire to lower its own compliance costs, by effectively nationalising all emissions reductions made by private businesses and thereby preventing them from being used as a basis for climate-neutral or climate-positive product claims by businesses themselves. The second barrier is the lack of agreement around the metric to be used for net-zero calculations involving methane emissions. There are three candidate metrics:

- GWP\* this focuses narrowly on the timing and magnitude of peak global warming, ignoring
  the wider obligation of UNFCCC members to avoid dangerous anthropogenic interference
  with the climate system, including the transmittal of risk through ocean temperature vectors
  which create a separate pathway to tipping point risk. Its advocates discount the overshoot
  of 1.5 degrees that is now in train, and instead promote a metric which embodies a grandparented entitlement to continue emitting methane at close-to-current levels for many
  decades, depending on trends in CO2 emissions. This is an entitlement that also ignores the
  principle of common but differentiated responsibility, entitling rich countries to grab
  atmospheric space which poor countries might justifiably claim for themselves, on the basis
  of social justice and historic responsibility considerations. GWP\* has little international
  credibility but has become the sacred metric of the current NZ agricultural leadership, who
  face strong incentives for short-termist beliefs and behaviours, especially since the rise of
  the populist Groundswell movement.
- GWP-20 this metric better reflects the danger-potential of methane in a 20-year time-frame, which is roughly the time frame we actually now have left for action. It also recognises the significance that the huge level of solar heating captured by a continuing flow of methane has, especially on the southern ocean, where the heat accumulates in a manner comparable to the acknowledged cumulative effect of CO2 in the atmosphere. Under GWP-20, a tonne of methane has adverse effects on the climate system equivalent to 84 tonnes of CO2. While this would reflect the real need for precautionary action on methane, it would create onerous offsetting obligations on methane emitters. The metric further attracts criticism from those who claim that offsets are inherently less valuable than gross emissions reductions. Critics fear that adoption of GWP-20 would reduce the pressure to curb CO2; that it would place too much emphasis on offsetting which may be temporary rather than permanent (especially under runaway warming scenarios); and that liability arrangements for offsets over future time periods, and their recording in emissions accounts, are deficient.
- GWP-100 this metric is a compromise, roughly measuring the relative effects of methane over a century. It has the virtue of being internationally accepted, used by the UNFCC as the basis for measuring governments' emissions, and by all reputable international certifiers for measuring business emissions. It also strikes some sort of balance between the advocates of GWP\* and GWP-20.

Recommended actions for New Zealand are:

- Review the Climate Change Response Act's treatment of methane, with the aim of increasing the urgency of action on methane while enabling net rather than gross emissions of methane as the legal measure of outcome.
- Adopt for regulatory and assessment purposes in NZ the international convention of GWP-100 as the metric for assessing net methane emissions relative to CO2.
- Create an enabling policy framework which removes remaining barriers to a vigorous market in offsets for all emissions, including methane, providing the resulting offsets meet the usual certification criteria including additionality, enforceable liability for permanence, etc.

#### Question 88 – other views on agriculture

The privileges and exemptions long granted to livestock agriculture are rooted in powerful vested interests and associated attitudes which will be difficult to shift. It is therefore crucially important that the debate moves beyond the blunt exercise of political power through deals cooked up between agricultural interests and officials in exclusive forums such as He Waka Eke Noa. The context for debate needs to be both democratised and widened, to a consider the issue of national development strategy discussed in our introductory section above.

Current policy settings mean that:

- New Zealand is adopting an economic development model which rests on long term, ongoing net emissions, and is environmentally harmful (not only in relation to climate but also freshwater and biodiversity).
- This development model is also inequitable in that Most New Zealanders face an impost through the ETS which amounts in practice to a large wealth transfer to biogenic methane emitters. Apart from being inequitable, the justification for this cross-subsidy is obscure.
- This development model is increasingly risky, as our traditional products face challenge from competitors like Meat and Livestock Australia who can offer climate-positive food products; many other plant-based and cellular protein food producers can do the same or will soon be able to.
- The distinctive role of our Government under this model is to subsidize NZ producers in a battle against more environmentally-friendly overseas competitors, a role which is bound to be divisive at home and abroad, and is hardly sustainable in a world of rising climate concern.
- We are missing opportunities to move rapidly toward a more sustainable development path by rapidly exposing farmers to the ETS; assisting them to change land use, including through offsetting their methane emissions on their own farms or via purchased offsets; and by taking advantage of our flexible exchange rate to move scarce resources to those development opportunities which can prosper while being held to account for their externalities.

We recommend a major analytical project to examine the strategic development pathways implied by climate policy options from a national benefit perspective. This should include in particular two competing pathways discussed in this report:

- The existing policy framework which privileges methane emissions
- An alternative policy framework which allows methane emissions to be offset and aims for net-zero methane alongside net-zero long-lived gases, with an option for achieving this in a shorter time frame.

We further recommend that the outcome of this and other studies be the focus of a proper public consultation before final decisions are made at the end of 2022.

#### Questions 106 through 114 on forestry

Our views on the role of forests embrace an important role for both exotic and indigenous reforestation and are set out in the Tahuna Group document linked at the top of this submission. Further, we challenge the idea (promoted on page 115) that forestry could over-deliver on the sequestration needed to meet our targets. We face an incongruous situation in which much low-producing land would be more valuable and would create more jobs if it were restored to forest, and yet the policy settings see this as 'over-delivering' simply because the policy itself effectively seeks to perpetuate and cross-subsidize dangerous methane emissions.

There is a more valid concern that a surge of forest offsetting might delay gross CO2 emissions reductions, although we have seen no analysis that suggests this is likely to be significant. However, it would be desirable to test scenarios in which a regulation was introduced requiring a proportion of forest offsets funded through the ETS to take the form of native forest restoration. This would raise the cost of offsetting, reducing unwanted side effects on CO2 emissions reduction, while spreading the benefits of forest restoration across a longer time frame and a larger area of land, and would confer distinctive benefits for biodiversity and water quality in many catchments.

#### Conclusion

Thank you for the opportunity to submit. We would welcome further dialogue.

| From:    |  |
|----------|--|
| Sent:    |  |
| To:      |  |
| Subject: |  |

Tuesday, 23 November 2021 9:30 pm climate consultation 2021 Limiting Carbon offsetting on Farmland

### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

To whom it may concern,

This email is in strong SUPPORT of the government LIMITING carbon offsetting on farmland. The reasoning for this is explained below:

- Carbon offsetting on farmland is pushing the price of farmland so high that it is no longer an option for many New Zealand farmers to purchase land to farm on, as it is just not profitable if debt needs to be serviced. If it continues at the fast pace it currently is, NZ is going to be left with flat finishing farmland only, with no stock to run on it as there will be no breeding country left.

- Majority of the businesses that are purchasing farm land for carbon offsetting are foreign owned in one way or another, meaning that the profits made are heading straight overseas with absolutely no benefit for NZ whatsoever. Unlike non-carbon farmed forestry these "carbon farms" do not require any labour therefore no jobs are created, there is no benefit to the local community and the profits made are going to overseas investors.

- Carbon offsetting on farmland is quite simply killing our rural communities, the same communities that have been the backbone of NZ for many decades. You see, when a farm is sold for carbon offsetting the trees are planted and then they are left to grow. There are no jobs created, there is no family living in that farmhouse any longer contributing to their local community, no local school as there are no children to attend, there are no shearers needed as no sheep to shear, no trucking needed as no animals to cart, no fencers needed as no fences to maintain, no fertiliser required therefore no planes or helicopter businesses needed, and most importantly no meat produced!

- Pine trees, which are primarily used for carbon offsetting are not native to New Zealand, they do not allow for anything to regenerate underneath them including native forests. The pine needles which drop off of the pine trees sour the ground beneath them and eventually make their way to our waterways. What is going to happen when these trees fall over and die? That's right, they are going to release all of the carbon they have absorbed back into the environment while also clogging our waterways. The same way that the slash from forestry has become an issue in recent years, except this issue will be 10x worse.

- Carbon farming also blatantly contradicts the government's goal of being predator free by 2050, as carbon forests are a breeding ground for all sorts of pests and predators.

- Carbon offsetting is a "band aid" solution to a problem which requires a much more thorough investigation and attack plan. It is leading consumers and the public to believe that action is being taken to better our environment, when in actual fact businesses are still operating in the same way they were before.

We are a young couple starting out in the farming industry, and can honestly say that we are extremely scared and worried about what our future looks like.



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#### 26 November 2021

Submission on *Te hau mārohi ki anamata* | *Transitioning to a low-emissions and climateresilient future: Have your say and shape the emissions reduction plan.* 

Ministry for the Environment Submitted by email to <u>climateconsultation2021@mfe.govt.nz</u>

# Submission on Transitioning to a low-emissions and climate-resilient future

#### Introduction

- 1. Energy Resources Aotearoa ("Energy Resources") represents people and firms in the energy resources sector, from explorers and producers to distributors and users of natural resources like oil, LPG, natural gas, hydrogen and biogases.
- 2. This document constitutes Energy Resources' submission to the Ministry for the Environment on its *Te hau mārohi ki anamata* | *Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.*
- 3. Our submission outlines some scene-setting remarks and core policy principles, before responding to a range of the questions posed in the discussion document, as attached in **Appendix One**.

#### **Executive Summary**

- i. We support the objective of net zero emissions. The question is not the goal but the method and pace of changed required to achieve it.
- ii. The goal of the discussion document should be on reducing net emissions. Net zero is the statutory target and a focus on gross emissions is unwarranted and will lead to costly policies.
- iii. Emissions policy should focus on reducing emissions in a way that imposes the least cost on society. If there are other objectives (such as conservation) or concerns about the impacts of the transition (such as equity issues) these should be addressed through the proper policies tools (e.g. conservation policy and welfare policy).

- iv. We support the New Zealand Emissions Trading Scheme ("ETS") as the principal policy tool except where demonstrable market failures remain.
- v. In considering further policies, cost-benefit analysis is needed, and each proposal must be carefully considered in light of the fact that the ETS has a fixed and sinking cap which will ordinarily neutralise the effects of further measures.
- vi. Centrally driven policies will have higher abatement costs and face information issues. The risk of government and policy failure must be carefully considered.
- vii. In relation to energy issues, the energy trilemma should be adopted as a governing framework to ensure balance between sustainability, affordability, and security of supply.
- viii. Regulatory barriers to innovation and technology should be identified and addressed, including in relation to carbon capture and storage ("CCS').
- ix. The risk of carbon leakage should be front of in mind. It cannot be discounted as an insignificant risk. Reducing domestic emissions in export sectors only for them to move offshore is counter-productive and domestically harmful, both economically and socially.
- x. Investment decisions need stable and predictable long-term policy settings, and are compromised by plans that are subject to political risk.
- xi. We support the concept of an energy strategy that is aspirational, direction-setting and not overly prescriptive. However, this needs to be complemented with an energy accord. An accord will help operationalise the goals contained in a strategy, and facilitate the investment required to unlock the smooth transition we all want.

### **General comments**

### The ETS sends price signals regardless of the complexity of economic activity

- 4. The most effective and credible way that policies are translated into behavioural change is through prices. To efficiently reduce emissions in our economy, price signals distil and convey complex, dispersed and dynamic information that informs action, ensuring that the most efficient abatement opportunities are realised by individuals and firms. A price systematically selects for least cost changes that reduce emissions, since a price effectively embeds a cost benefit analysis through individual choices.
- 5. The ETS can serve the function of including the costs of emissions into all prices in the economy included under its ambit, not just the goods and services that the government may currently think need to reflect emissions costs.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> We briefly address the claim, occasionally made, that consumers are not switching transport choices in response to carbon pricing. Firstly, decisions are typically made at the margin so are not always particularly 'visible'. Secondly, if there is low price elasticity of demand, then that may mean lower cost abatement opportunities are being pursued elsewhere in the economy. Thirdly, if it is seriously demonstrated that consumers are not making optimal choices (to the extent that optimal choices really exist at all when viewed in aggregate) then there may be information failures to investigate and to correct, and this should be done before restrictive regulations are made.

- 6. Professor William Nordhaus was awarded the Nobel Memorial Prize in Economic Sciences in 2018 for his work demonstrating that carbon pricing is the most efficient tool for reducing emissions. Nordhaus found that carbon pricing:
  - a. sends signals to consumers about which goods and services are more carbon-intensive;
  - sends signals to producers about which activities are most carbon intensive (such as coal burning) and which are less carbon-intensive (like solar or wind);
  - c. sends signals to propel innovation to find new, affordable alternatives; and
  - d. ... is the best means to convey these signals within well-functioning markets.<sup>2</sup>

### Drastic transformation is not necessarily needed

- 7. Drastic change or apparent 'transformation' is not needed for significant changes in emission levels to happen over time. This means that natural gas<sup>3</sup> boilers, for example, need *not* be banned, but rather a price signal will mean incrementally less natural gas will be used over time and lower emitting alternatives will be employed where it is efficient to do so.<sup>4</sup>
- 8. We strongly consider that the price signal through the ETS should remain the principal tool except where exceptional circumstances and clear evidence support further measures. Policy makers, who have expressly rejected least cost as an organising principle, appear to be using climate change to pursue other objectives besides emissions reduction. In doing so, they are not making regular use of basic disciplines like cost-benefit analysis to assess ex ante performance.
- 9. In considering 'transformation', a concept proposed in the discussion document, it is worth keeping in mind two other concepts:
  - a. the concept of 'the margin': thinking about the 'margin' (as in the outer edge) reminds us that decisions by individuals and firms often change only in incremental stages. For example, a user of a petrol car may not abandon it all together in the face of carbon prices but may drive incrementally less and walk to the local shops instead. This can seem discrete and difficult to observe at the individual level, but in aggregate the effects can be large; and
  - b. the concept of diminishing returns: emissions reduction is less a question of which technology should be used but *how much should be used*. It is likely, for example, that solar will be part of the journey to net

<sup>&</sup>lt;sup>2</sup> <u>https://www.iisd.org/articles/nordhaus-nobel.</u>

<sup>&</sup>lt;sup>3</sup> As opposed to other clearly labelled, and well understood gases such as hydrogen and biomethane, or biogases.

<sup>&</sup>lt;sup>4</sup> Given each individual faces their own 'utility function', each individual will make decisions that they understand to be efficient based on the tacit knowledge and information that they possess, and this cannot be determined centrally.

zero, as the first solar panel will reliably reduce emissions. But at some point, further investment in solar (or any other technology) will stop displacing other technologies, and its emissions benefits will cease. Centrally designed public policy will struggle to see the point at which benefits cease, due to the inherent challenges of dispersed knowledge. Indeed, this is the fundamental problem with the core organising principle of green technology policy, whereby 'more is simply better'.

The discussion document advice does not engage with the neutralising effect of the capped ETS on further measures

- 10. We consider it critical that emission reductions must happen at the level of the national economy, and not just in particular sectors. In considering this point, it is critical to bear in mind that New Zealand has just recently (and rightly) instituted a genuine cap and trade scheme. This emissions cap means a new and important dynamic in climate economics must be carefully considered the 'waterbed effect'.
- 11. The waterbed effect is an analogy showing that under a capped system, regulations further to the ETS cannot reduce overall emissions, because 'pushing down' on one part of the 'waterbed' (through a sector-specific ban or fuel mandate for example) means that the displaced set of emissions simply 'pops up' somewhere else in the economy as the overall volume of emission units does not change.
- 12. This has a direct and probably unavoidable consequence for the effectiveness of other direct interventions which must be seriously and deeply considered each time another policy is proposed.
- 13. The fixed cap is particularly relevant to a new and emerging emphasis on reducing *gross* emissions. A focus on gross emissions with inadequate regard for the emissions cap can lead to a costly and ultimately destructive game of 'whack a mole', whereby gross emissions are hit with suppressive policies that, in addition to various unintended consequences and costs, enable units to be freed up for emission elsewhere. The result, therefore, can be much pain for little or no gain.
- 14. Quantification of emission reductions (and associated costs), and how they can be achieved in the context of a cap (if at all), should be clearly articulated. This is *especially* important given the apparent focus on gross emissions and the desire to suppress sectoral emissions through direct regulation.

### Costs and benefits of complementary measures need to be evaluated using established New Zealand government methods

 The costs of the policies for the transition should be fairly distributed and not loaded onto certain sectors of the economy without considering the impacts. Consumers and firms should be informed of the costs of transition in a transparent way.

- 16. The broad approval of, and support for, the ETS will be threatened if the costs of transition are unfair or excessive. Policy interventions need to be justified using regulatory impact analysis, as required by the Cabinet Manual and following Treasury regulatory impact guidance.<sup>5</sup>
- 17. In choosing the mechanism to reduce emissions, the choices are necessarily between imperfect instruments. What instrument is better is an empirical question that can be guided but not resolved from first principles. In considering additional policies, the following questions must be asked:
  - a. what is the *specific* and residual problem to be addressed?;
  - b. what are the feasible options (government and/or non-government) for achieving the desired objective?; and
  - c. are the benefits of government intervention likely to outweigh the costs (including risk of government failure)?

### Risks to consider when contemplating further policies

- 18. Alongside market failure, the government must also consider the risk of policy failure, also known as government failure in the language of public administration.<sup>6</sup> Extreme care must be exercised when considering regulation beyond the relatively simple policy of an ETS. Specifically, the weaknesses of political and bureaucratic institutions must be recognised and carefully considered. Too often the costs of government regulations are assessed simply in terms of direct administrative and compliance costs, but this is far too narrow.
- 19. In addition to the considering direct costs, transaction costs and opportunity costs of resources spent on compliance, it is crucial to consider the risks of government failure, which can occur because of:
  - a. *political failure*: legislation responds to interest groups at the expense of the general public;
  - b. *bureaucratic failure:* government agencies tend to advance their own interests (e.g. expanding budgets and influence) rather than addressing the original problem that warranted intervention in the first place;
  - c. *judicial failure*: slow, costly and uncertain legal processes can arise from new regulations;
  - d. *regulatory capture*: regulatory agencies can end up captured by stakeholders in the regulated industry; and
  - e. *regulatory creep*: where additional costly regulations are needed to manage unintended consequences of the original policy).

<sup>&</sup>lt;sup>5</sup> <u>https://www.treasury.govt.nz/information-and-services/regulation/impact-analysis-requirements-regulatory-proposals.</u>

<sup>&</sup>lt;sup>6</sup> Note that our use of the term government failure is not intended to convey a political judgement nor is it necessarily pejorative. We use the term in its traditional public economics and public administration sense whereby government policy can lead to a misallocation of resources.

- 20. The discussion document assumes that additional policies are needed and appropriate without recognising and engaging with the risks of government failure which could compromise its own preferred path of regulation.
- 21. If there are other market failures in relation to emissions, it must be demonstrated that these are residual and material following the primary intervention focussed on externalities (i.e. the ETS). The problem definition must be clearly articulated and then the marginal costs and benefits of intervention must be clearly demonstrated.
- 22. Even if there instances where further measures are justified, this is not carte blanche justification for interventions across the economy each must be clearly justified on its merits with a high degree of confidence that net benefits will arise.

### Direct emission regulations have a long history of failure and should be treated with extreme caution

- 23. The discussion document does not adequately consider the risks that policymakers get the particular bets on technologies and emissions-reducing policies wrong. Specific pre-determined policy settings like bans/restrictions (on new gas connections, new coal boilers and internal combustion vehicles for example) risk closing off future options, including for example biogases which could use the existing gas infrastructure.
- 24. The government should take lessons from other countries that have taken direct measures to reduce emissions. The case of Germany is highly instructive and should be well-known.

#### Central plans create complexity and lead to inefficiency, so policy failure must be considered

25. We are concerned to see the discussion document state (page 13) that:

"Government will pull all available policy levers – emissions pricing and other incentives (for example, the Clean Car Discount), targeted regulation, direct investment in innovation and infrastructure and technology change, and tailored sectoral policy packages to drive and support the change required."

- 26. The number of plans and strategies proposed in the discussion document concerns us. Ones we identified include the:
  - a. Emissions Reduction Plan;
  - b. Treaty of Waitangi Strategy;
  - c. National Energy Strategy;
  - d. Circular Economy Strategy;
  - e. Bioeconomy Strategy;
  - f. Freight and Supply Chain Strategy;
  - g. Industry Plans;
  - h. Building Transformation Plan;
  - i. Equitable Transitions Strategy;

- j. New Zealand Rail Plan;
- k. National EV Infrastructure Plan;
- I. Hydrogen Roadmap; and
- m. Multisector Strategy.
- 27. We consider that it is practically impossible to co-ordinate and successfully implement so many centrally driven strategies and plans across a whole dynamic and evolving economy. The interactions and unintended consequences cannot be predicted, and the misallocation of resources will almost certainly arise. The belief that government can overcome the economic calculation problem has even been described as 'the fatal conceit' by Professor F A Hayek, winner of the Nobel Memorial Prize in Economics.

# Sectors are becoming increasingly interconnected, meaning simple signals are more important than ever

- 28. The economy and various markets for energy use are becoming increasingly complex and increasingly interwoven. Traditionally, transport fuel, electricity and process heat were previously quite clearly delineated by different and essentially unrelated fuel sources, but this is no longer the case and this complexity must be front of mind for policy makers. Indeed, these various sectors are now inextricably interlinked by the carbon price.
- 29. An example of the greater interconnection is that with increasing electrification, the electricity market is now relevant to both process heat and transport; and similarly, natural gas becomes more important for affordable electricity in terms of peaking. Another example of interconnectedness is that using natural gas or electricity for hydrogen production would put upward pressure on the prices of the fuel used for feedstock.

### The risk of poor interaction of policies

- 30. Interventions throughout the various sectors and aspects of the economy begin to interact in ways that government cannot realistically envisage. This can lead to an intertwined set of interventions that produce unintended outcomes, and which may be too difficult to reform or repeal should they subsequently prove to be misguided.
- 31. It can be tempting to focus on a particular policy goal (such as increasing the share of renewables) through regulations, but this will almost inevitably have a ripple effect into other parts of the economy or energy system. Any ripple effects considered inconsistent with future government aspirations may compel these governments to intervene in the affected sectors, to "fix" the incentives and behaviours. Before long, we may end up with a nested web of interventions that are impossible to predict the effects of, and from which we may not be able to extract ourselves.

32. By way of example, the pathway the proposed approach sets us on as a country has been reasonably well foretold in the UK's Helm Report. In his key findings, Professor Helm notes that:

"The scale of the multiple interventions in the electricity market is now so great that few if any could even list them all, and their interactions are poorly understood. Complexity is itself a major cause of rising costs, and tinkering with policies and regulations is unlikely to reduce costs. Indeed, each successive intervention layers on new costs and unintended consequences. It should be a central aim of government to radically simplify the interventions, and to get government back out of many of its current detailed roles."<sup>7</sup>

33. Interventionism is also more likely to have a chilling effect on commercial investment, as there becomes greater risk of other interventions impairing assets or interfering with commercial plans.

#### Long-term policy credibility and stability is important

- 34. Long-term stability, predictability, and political durability is critical given New Zealand's reliance on foreign capital and the lengthy capital-intensive developments involved in the energy sector across political cycles.
- 35. Without political stability behind climate policy, economic actors will likely delay making important actions to reduce emissions, or they will raise prices as risk is factored in. Neither is helpful in achieving decarbonisation.
- 36. The political consensus for the ETS and the fact it is well established, and at \$65 per tonne without economic or social unrest, is significant. Consensus is easier to form and is more permanent around a set of rules (i.e. rules- or systems-based approach) than for a series of ad hoc policies like EV subsidies, renewables mandates etc.
- 37. We do not want to see a situation where we have to 'start again' when a change of government occurs. The more cross-party support in the energy sector, the more predictability it gives to energy investors who make long-term decisions. For example, of direct relevance is the recent announcements of the opposition National Party to repeal the ban on new offshore petroleum exploration and new decommissioning legislation.<sup>8</sup>
- 38. Projects started by government subsidies are particularly susceptible to political swings and changes of government. There is a real risk of stranded assets when firms are subsidised to undertake otherwise uneconomic projects, as those businesses can fold when controversial subsidies are repealed by a new government, meaning public money has been wasted and resources misallocated.<sup>9</sup> Care should be taken to ensure that firms are investing in

<sup>&</sup>lt;sup>7</sup> Sir Dieter Helm, The Cost of Energy Review, 25 October 2017, page 8, paragraph 3.

<sup>&</sup>lt;sup>8</sup> <u>https://www.national.org.nz/decommissioning-bill-another-blow-to-energy-affordability-and-security.</u>

<sup>&</sup>lt;sup>9</sup> We occasionally hear concern about stranded assets in the fossil fuel sector, but providing it is private money at risk and not a result of subsidies, boards will consider long-term risks at no risk to broader society.

genuinely productive economic activity, and not simply incentivised towards 'rent-seeking' because of the availability of government subsidies.<sup>10</sup>

### Conclusion

- 39. We thank for the Ministry for the Environment for the opportunity to comment on the discussion document. Although supportive of the goal of net-zero emissions, we consider the principles and approach proposed lacks rigour and does not engage with fundamental dynamics of a capped ETS, which neutralises the effectiveness of further direct regulation.
- 40. We recommend revising the principles and relying on the ETS except where any demonstrable and material residual market failures remain. In those circumstances, cost benefit analysis should be conducted in relation to any further proposals. In addition to considering market failures, the risk of policy failure must also be recognised and accounted for.

<sup>&</sup>lt;sup>10</sup> "Instead of creating wealth, a firm seeks to obtain financial gains from others through alteration/ manipulation of the environment where economic activities take place. A popular example for rent-seeking is political lobbying by companies. These are primarily done by companies in order to make economic gains through government action. This might be done by a company to get subsidy from the government for the product which it produces or increasing tariff rates by the government for its services, etc. Such a practice neither leads to creation of new wealth, nor does it benefit the society." Source: https://economictimes.indiatimes.com/definition/rent-seeking.

### Appendix One: Responses to questions in the discussion document

1. This appendix responds to questions posed in the discussion document. Not all questions are answered as not all are relevant to our sector or our members.

# Question 1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not.

- 2. Principles can be useful if they are used as touchstones to guide and inform thinking, although they should not be determinative as the bottom line should be policies where social benefits outweigh social costs.<sup>1</sup> We believe the proposed principles are not suited to the task at hand, and, instead of guiding decision-making, are vague and broad enough to justify almost any intervention that could be proposed. In addition, broad principles without a key analytical construct and their heart are not conducive to ex post accountability or analysis.
- 3. Our core concern is that the proposed principles are focussed enough on the heart of the climate change challenge, i.e. reducing emissions and ensuring efficient and least cost abatement. We would suggest the following principles (in no particular order) be used:
  - a. **long-term stable and durable policy** it is important that policies to help achieve the emissions transition are stable and durable. This is because the transition will take place over many decades, so individuals and businesses need to have confidence that choices they make will not be undercut by sudden policy changes. This is particularly important in the energy sector due to the high capital costs and longterm nature of many projects;
  - least cost abatement the transition will be costly, and it is important for it to happen with the least cost to community welfare.<sup>2</sup> Policies should ensure that *abatement* of emissions happens in a way that is the most efficient and the least destructive to community welfare;
  - c. focus on net emissions, not gross the statute is clear that the objective is for net *zero* emissions, i.e. gross emissions minus offsets. Net is also the scientifically relevant measure. The climate doesn't care about reductions vs removals;

<sup>&</sup>lt;sup>1</sup> We suggest that standard economics be used as the governing framework, with allocative, productive and dynamic efficiency as the key goal, and that the threshold for intervention be the demonstrable presence of material market failure (externalities, monopoly, information asymmetries or public goods). In considering regulations, a full analysis of costs and benefits be made, and as a matter of course this should always include assessment of the risk of government failure.

<sup>&</sup>lt;sup>2</sup> We released a Perspectives note on *Why a 'least cost' approach to net zero emissions is critical* which can be found at <u>https://www.energyresources.org.nz/dmsdocument/178</u>.

The net *zero* emissions goal is also reflected in Article 4 of the Paris Agreement which states that:

"Parties aim to... ... achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.

The use of the term "net" in law and policy is important: it reflects the bipartisan political consensus that in some cases emissions cannot be eliminated without incurring excessive costs. It is better for society to offset these emissions with the net result for the climate being the same;

- d. **technology and fuel-neutral** associated with a net emissions focus, policies should be neutral/agnostic towards fuels and technologies and seek to achieve efficient choices without heavy normative preference imposed;
- e. **energy trilemma –** the energy trilemma should be used as a supporting analytical construct when considering energy-related matters. The energy trilemma focusses thinking on the three key components of a successful energy system affordability, reliability and sustainability. Each component is important, but trade-offs are inevitable.

The focus should be on achieving sound and balanced energy policy and not *overemphasising* sustainability, especially to the extent that general energy policy gets used predominantly to achieve specific climate change objectives;

- f. employing optimal policy mechanisms a focus on net emissions means that policy should target emissions and not a multitude of other objectives. Although spin-off benefits are a bonus, emissions policy should focus solely on reducing emissions. Where non-emission matters are important, the optimal policy tool should be used. Providing direct support to people impacted by climate change or the costs of the transition has never been a purpose of the ETS and there are more effective policy tools to achieve this. If the ETS has distributional consequences that are deemed undesirable, then the state's role in redistribution can be exercised through welfare or tax policy; and
- g. **remain cognisant of the risk of international competitiveness and carbon leakage** – emissions should not be reduced through closure of firms in New Zealand if activity is likely to simply relocate overseas to jurisdictions with less stringent emission policies.

Should exporting firms close, the risk of carbon leakage arises. Although dependent on circumstances, this cannot be disregarded as a serious unintended consequence of aggressive emissions policies. Not all countries have enforced domestic emission caps. This has direct implications for the likelihood of leakage from firms that we work with in the energy resources sector.<sup>3</sup>

### Question 2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

4. The ETS with its fixed and sinking cap will drive emission reductions through the price signal. Government should ensure that no unreasonable regulatory barriers prevent innovation and emission reductions. We do not want or support policies that favour or especially promote particular technologies. What we seek is an even-playing field that allows fuels and technologies to find their efficient place in the economy, for example, CCS.

### Barriers to carbon capture and storage

- 5. CCS has the potential to reduce emissions at a large scale. CCS is the process of capturing carbon emissions from large sources such as power plants and large industrial users and storing them where they cannot escape into the atmosphere. Often this is deep underground in geological formations where natural gas originally came from.
- 6. CCS is a good example of an emissions reduction technology that faces regulatory barriers However, the lack of an enabling regulatory framework for the use of this technology in New Zealand will dissuade investors. New Zealand academics and the Productivity Commission have already shown that the regulatory regime is a major barrier, and identified where the gaps lie.<sup>4</sup>
- 7. In New Zealand, the 8 Rivers company has proposes a zero emissions power generation plant in Taranaki. As part of its "Project Pouakai", 8 Rivers is proposing to produce electricity, urea and hydrogen fuel with zero-emissions using proprietary Allam-Fetvedt cycle technology that captures all CO<sub>2</sub> inherently in the production process enabling sequestration of pure CO<sub>2</sub>. This technology has just been successfully deployed in Texas, and New Zealand should ensure its regulatory settings do not unnecessarily preclude it from happening here.<sup>5</sup>
- 8. In Europe there are number of projects underway, including in Holland and the UK, which have established decarbonised industrial clusters that seek to

<sup>&</sup>lt;sup>3</sup> For example, in the scenario of New Zealand methanol no longer being produced by Methanex here due to emission pricing imposts, it is most likely that production will simply shift to China. It is likely that any reduction in the amount of Methanol produced will be picked up by other producers (potentially China). New Zealand methanol is the swing producer in the region so its closure would immediately be felt and other participants would be able to seize the opportunity to fill the supply gap

Barton (et al) (2013), Carbon Capture and Storage: Designing the Legal and Regulatory Framework for New Zealand:
 Report for the Ministry of Business, Innovation and Employment and the New Zealand Carbon Capture and Storage;
 Productivity Commission (2018), Low Emissions Economy: Final Report, page 449.

<sup>&</sup>lt;sup>5</sup> <u>https://netpower.com/press-releases/</u>.

consolidate emissions and send them to offshore storage.<sup>6</sup> The UK also hosts multiple CCS and hydrogen projects, including Acorn, which is designed to be a low-cost, low-risk CCS project that provides CO<sub>2</sub> mitigation infrastructure aimed at meeting the Scottish and UK Government's net zero targets.<sup>7</sup> Acorn recently announced Shell, Harbour Energy and Storegga have become equal partners in the Project. The Northwest of England and North Wales are seeking to develop a similar CCS and hydrogen project called HyNet Northwest.<sup>8</sup>

9. CCS can be the enabling technology that unlocks and enables a hydrogen economy and underpin security of gas supply by encouraging the appropriate incentives to invest in ongoing gas exploration. The lack of investment confidence was highlighted in a recent report by the Gas Industry Company.<sup>9</sup>

### Capital barriers

- 10. 'Capital barriers' are commonly viewed as a barrier that Government should seek to overcome. We do not consider this to be the case, as they are just a normal part of the commercial sector and not evidence of any market failure. Costs inform where emissions can be reduced at least cost, and real economic costs cannot be avoided subsidies or regulation just mean someone else pays it. Emission reduction projects certainly compete for internal capital, but this does not represent an actual barrier per se. The observation about competition for capital is axiomatic as everything faces competition, as all decisions involve an opportunity cost.
- 11. We accept that it is important that firms have information to ensure they can make informed decisions about energy but consider that firms already have the right incentives to pursue and use this information. General information can be obtained online, tailored advice can be sought from consultants, advisors and sometimes government-provided information.

# Question 3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

12. An Energy Accord could be a useful tool. We cover this later in response to question 58.

<sup>6 &</sup>lt;u>https://www.porthosco2.nl/en/.</u>

<sup>7 &</sup>lt;u>https://www.netzeroteesside.co.uk/.</u>

<sup>&</sup>lt;sup>8</sup> <u>https://theacornproject.uk/.</u>

<sup>9 &</sup>lt;u>https://www.gasindustry.co.nz/work-programmes/gas-market-settings-investigation/developing-</u> 2/final/document/7342.

## Question 4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

- 13. Policies should be targeted at achieving the goal that the relevant mechanism or tool is suited to. If emissions reductions are the objective, that should be pursued in a manner that imposes the least loss of community welfare. Pursuing other objectives through emissions policy will almost certainly increase the cost of the transition. Biodiversity is a separate policy and should be achieved through biodiversity policy. Some spinoff benefits may arise, but those are merely a 'nice to have' and should not be given particular weighting except as a potential tie-breaker.
- 14. Climate policies should focus on reducing net emissions. Separate policies can solve biodiversity. Using climate policies to pursue non-emissions goals can only be achieved at the expense of higher emissions. Other environmental and social goals should be achieved separately.

## Question 6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

- 15. Fundamentally, reducing net emissions at the lowest possible cost will achieve this. Income and not foregoing economic growth buys protection from the harm of climate change, so resources should not be wasted on less efficient policies.
- 16. The risk mitigation function that natural gas can provide in the electricity system should be taken into account. The transition to a greater share of variable renewable generation in the electricity network will occur over an uncertain timeframe. The natural gas pipeline networks mitigate resilience risks to the extent that weather-related issues affect variable renewable generation.

## Question 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

17. Avoid prematurely moving to reliance on renewable electricity generation which is susceptible to weather issues. This would involve shifting away from a hard target of 100% renewable electricity. For this reason alone, a hard target is undesirable.

## Question 20. Is there anything else you wish to share in relation to making an equitable transition?

18. As New Zealand moves towards a lower emissions economy, the energy sector will be a large part of this transition to more renewable energy and emerging industries. The energy workforce is challenged to not only meet the future skill needs of emerging industry but to also ensure its current highly skilled workforce is not vulnerable to labour market restructure.

- 19. In terms of skills retention, it will be important that there will be enough jobs in new areas to sustain the workforce. To help inform thinking about necessary skills development, greater consideration is needed in relation to what the new jobs and skill requirements could be and whether the education system or immigration settings are conducive to providing those skills.
- 20. In terms of skills transfer, it is important that existing skills in the energy resources sector are not prematurely ended through the effects of government regulations before new jobs are available in alternate firms and sectors. If a 'gap' emerges, this is negative not only for workers out of between employment but also for firms in low emissions sectors.
- 21. The skills in the upstream oil and gas sector will have a critical role in supporting other industries such as geothermal, hydrogen or biogas. The skills can also support increased importation of refined petroleum products if the remaining refineries in Australia and at Marsden Point close in the near term. A vibrant ecosystem of service providers is vital both to the current sector but also to the transference of skills and capabilities to adjacent sectors. If such firms cannot access skills then they will struggle to profitably operate.

## Question 23. Is there anything else you wish to share in relation to government accountability and coordination?

22. If the government considers that direct interventions and regulations are justified, it needs to show the costs of its chosen path and demonstrate, through cost benefit analysis, that they are worth proceeding with. The ETS provides a transparent and universal cost mechanism for the cost of emissions throughout the economy. The proposals have not been assessed in a cost-benefit framework or exposed to proper analysis of risks.

## Question 27. Is there anything else you wish to share in relation to funding and financing?

23. Rather than putting revenues into climate spending, we recommend the money directly provide tax relief to households. This would help to ensure that households are not directly worse off simply because of the carbon prices they must pay as a necessary part of the transition. It would also help to ensure durability and support for emissions mitigation as the direct burden on households will be lessened.

# Question 30. Do you agree the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

24. Planting trees is a temporary solution, but afforestation will get the country across a hump that will otherwise be very costly to cross. Foregoing or limiting afforestation will mean expensive abatement must be pursued now, even

though it is almost certain that in the future lower there will be lower cost abatement opportunities (such as through technological developments).

- 25. Planting trees may be a low-cost abatement option for many landowners, but only until it is not. New Zealand does not have unlimited marginal land and there are competing uses, so as the best land for pines is used up the supply of suitable land declines which pushes up the land and carbon price. This makes other abatement opportunities more attractive/competitive.
- 26. Even if there are some undesirable land use outcomes at the margin these can be controlled with government or council policy around land use or government purchase of the land with compensation. We note that there is no danger of *running out* of land. If we did nothing else to reduce gross emissions (extremely unlikely) and only planted trees to lower net emissions, and only planted trees on farms, by 2050 we would have covered 9% of farmland in trees. The earliest date we run out of land on the most generous assumptions is some time in the 2500s.<sup>10</sup>
- 27. A sound tool to avoid the overplanting of trees or the need for specific government land policy (assuming this is warranted) would be to enable offshore mitigation through high-quality international units, so as to provide likely lower cost abatement options than afforestation. The Climate Change Response Act 2002 has a strong presumption against the use of international units, and we consider this should change.<sup>11</sup>

## Question 32. Are there any other views you wish to share in relation to emissions pricing?

28. See our discussion in paragraphs 4-6 in the body of this submission.

# Question 58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

29. We are not generally favourable of typical government strategies as they can become specific *plans* which take on the role of individuals and businesses who should plan themselves. Strategies often over-promise and under-deliver and inadequately engage with the trade-offs and costs when pursuing the stated vision. Neither do they tend to be durable across political cycles.

- (1) Emissions budgets must be met, as far as possible, through domestic emissions reductions and domestic removals.
- (2) However, offshore mitigation may be used if there has been a significant change of circumstance—
   A.1 (a) that affects the considerations on which the relevant emissions budget was based; and

<sup>&</sup>lt;sup>10</sup> See <u>https://greatsociety.nz/2021/08/24/how-much-land-do-we-really-need-to-plant-with-trees/.</u>

<sup>&</sup>lt;sup>11</sup> Section 5Z in Part 1B of the Climate Change Response Act states:

A.2 (b) that affects the ability to meet the relevant emissions budget domestically.

- 30. On the other hand, a sound strategy should be aspirational, and *directional* setting a direction of travel, *after which*, and *against which* choices can be judged, but it should not be determinative or overly specific.
- 31. Our general concern about strategies is realised in the discussion document states on page 84 that:

"Once the emissions reduction plan is in place, we will develop an energy strategy to consider priorities, challenges and opportunities for a successful transition."

- 32. This sequencing is not aligned with a strategy in the normal sense of the word and does not give us confidence in it. A sound strategy should outline, at a high level, how determined objectives can be achieved. Any plans and detail should come *after* that (although in the case of government strategies we consider that businesses and individuals should undertake the planning as opposed to government).
- 33. That said, we can support the Government adopting a national energy strategy, if orientated correctly and 'pitched' at the right level. Our suggestion is that such a strategy should be complemented by an energy accord. Having developed the appropriate goals, the Government should work with the energy resources sector to develop an *accord* between energy sector participants and the Government. An accord would codify a joint commitment to work together to enable and promote a vibrant and well performing energy resources sector. We distinguish this from a top-down energy strategy, and would be in the spirit of a collaborative approach similar to the Construction Sector Accord. This would provide for the close industry input and commitment needed to ensure enduring change.
- 34. An accord, properly developed, would create a framework and platform for government and industry to collaboratively work together to consider and address key challenges in the sector. These could include security of supply, affordability, environmental sustainability including emissions, regulatory environment, and skills and training. This very list highlights the complexity in the sector and the suitability of genuine work between businesses and government.
- 35. If an accord is reached, a subsequent work plan could be developed to deliver the outcomes agreed upon, perhaps timed broadly through the emission budgets to promote action on three fronts:
  - a. actions from businesses;
  - b. actions from government; and
  - c. joint actions requiring involvement and commitment from both businesses and government.

## Question 60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

36. Fundamentally, we consider the only target needed is the net-zero emissions one. A deeply valuable insight from the Interim Climate Change Committee was that a renewable electricity target would have perverse consequences in the broader energy system and recommended a focus on electrification of transport and process heat instead. The logic of this should be taken one step further: an energy target is not appropriate either, and the focus should be elevated to the level of the whole economy.

### Renewable energy target

- 37. The Commission proposed a target of "60% renewable energy by 2035". The focus should be on emissions rather than fuel types or technologies. As a second-best option, if the government were to adopt any quantitative energy target (something we are generally sceptical of), the target must be about low emissions (the desired result) and not renewables (one of the inputs to achieving the desired result).
- 38. This is because:
  - a. not all renewable generation is low emissions (for example, highemitting geothermal fields which can produce a similar emissions footprint to natural gas-fired generation);
  - b. all generation, including renewables, contains embedded emissions created throughout the asset lifecycle, and those embedded emissions should be taken into account; and
  - c. hydrocarbons can be used with carbon capture and storage or other offsets to reduce emissions.
- 39. We understand that the Commission recommends the 60% renewable energy goal because its modelling suggests that this will happen by 2035 anyway, but the proposition of a hard target is an unnecessary one-way bet. Targets constrain optimisation and can force second best outcomes. Targets can also be a recipe for rent-seeking, whereby firms lobby government for inefficient policies or subsidies to help achieve an arbitrary goal, such as biofuel mandates which force undesired and higher cost fuels upon consumers in the hope that one day they will be economic. As stated in the BusinessNZ Energy Council 2017 Energy Briefing:

"...targets can also make government a hostage to fortune. Mandatory targets with hard and fast plans to achieve them can easily become inflexible millstones that stifle innovation and misdirect resources."<sup>12</sup>

<sup>&</sup>lt;sup>12</sup> Page 7 of the PDF. <u>https://www.bec.org.nz/\_\_data/assets/pdf\_file/0009/137556/2017-Energy-Briefingsingle-pages.pdf</u>.
40. A myopic focus on renewables could lead to costly decisions to push out fossil fuels simply to meet the 60% target even at the expense of efficiently reducing net emissions.

# Renewable electricity target

41. While we support the language in the discussion document indicating that the current 100% renewable electricity target is only aspirational, we do not support a renewable electricity target. If a renewable target is to be kept at all, we would look to the Climate Change Commission's recommendation that it be replaced a goal of 95–98 per cent renewable electricity by 2030.

# Question 61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

- 42. As a general principle, we do not support bans as they are blunt instruments which reduce optionality and hide the true cost of abatement. Bans may also have significant unintended consequences which cannot be easily unwound, and even if such consequences are identified, it is very difficult to reverse them in a manner that restores investor confidence if the policy is subject to party politics.
- 43. We prefer price signals to guide changes on the margins, and with a capped ETS our level of confidence in this strengthened.
- 44. The Climate Change Response Act, which should govern all climate policy, is emphatically not about phasing out oil and gas (although the industry recognises and accepts that a significant reduction is almost certainly required). Instead, the task and challenge should be to reduce emissions' impact on the environment by lowering net emissions through achieving an efficient mix of reduced use, more efficient use, improved management of fugitive emissions, offsets, and bio and geo sequestration etc.

# Gas connection ban

- 45. We strongly oppose any policy that new gas or LPG connections should be banned by 2025 and "earlier if possible", and consider it to be the epitome of bad public policy. Officials have not established the intervention logic for such a change and appears to have ignored basic public policy analysis, and have not demonstrated with any confidence the emission reductions it would deliver.
- 46. It is concerning to see a substantial recommendation that forces significant change on an entire industry without any assessment of the costs and distributional impacts. Moreover, there are significant economy wide market structure and competition implications for any new business that requires a new natural gas connection. A ban will force new businesses to use more expensive and/or less effective fuels putting new entrants at a commercial disadvantage relative to incumbents.

- 47. What may be a good choice for one firm may not be good for another, and because information is dispersed only the firm in question can best make decisions on what technology to use.
- 48. A ban would threaten to destroy the value of long-lived assets that can continue to provide significant value in New Zealand through and beyond the transition. Biogas and hydrogen can be used in natural gas pipeline infrastructure, but preventing new connections will undermine the ongoing operation and maintenance of that infrastructure closing off the option of cleaner fuels. Natural gas network operator First Gas is actively looking at how the network can be used for low emission fuels. LNG, which could be imported could also use existing infrastructure and this will provide a likely safety valve in the absence of sufficient domestic gas.

| From:    |
|----------|
| Sent:    |
| To:      |
| Subject: |

Monday, 22 November 2021 9:08 am climate consultation 2021 Limiting carbon offsetting on farmland

# MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Carbon offsetting on farmland needs to be limited for many reasons, however, one which often seems to be missed is the fact that pine forests are breeding grounds for pests. The carbon forestry has no life other than possums, goats, pigs and deer.

We live next to a block and nothing is done to control them - we are not even allowed in to control pests! By covering more of the country with carbon pines, there will be more pests which contradicts the governments pest free 2025!

At least native planting would provide habitats for native fauna, and after the money has stopped for the carbon credits, the land will be viable and regeneration of bush can continue.

Regards,



# Gisborne Boys High School

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Attn: Climate Change Commission <u>climateconsultation2021@mfe.govt.nz</u>

24 November 2021



Dear Sir/Madam,

# Federated Mountain Clubs' response to the proposed Emissions Reduction Plan

# FMC Background

FMC (Federated Mountain Clubs) is a national community-led organisation that for 90 years has been advocating for the protection of the natural environment, and encouraging outdoor recreation.

FMC has around 100 affiliated outdoor clubs, from a broad variety of non-motorised outdoor pursuits, and speaks for a membership of more than 21,000 individuals.

FMC membership is on the front-line of climate change in New Zealand, witnessing first-hand the retreat of our glaciers and the crumbling of our high alpine areas, which impacts upon the health of natural environments and access to the mountains.

FMC has a Recreation Transition campaign, the mission statement of which is: FMC believes that a low-carbon recreation future with a greater focus on local communities and opportunities, will be fun, fulfilling and have no shortage of potential for adventure and exploration. We want to share this message and help the outdoor community on this journey.

FMC recognises that changes required in our transition are both physical – for example, infrastructure for low-carbon recreation such as local tracks, cycleways, camping opportunities, electric transport options - and psychological. The latter concerns individuals reimagining their recreation, people enjoying many layers of experience at familiar places, and communities forming rich connections within landscapes.

# FMC position on emission reductions

FMC supports New Zealand reducing emissions consistent with a no-more-than 1.5 degree global temperature increase, which arguably could be currently represented as a 50% reduction in emissions by 2030, and recognises that these reductions will reshape our society and lifestyles.

FMC believes that due to historic emissions, emissions increases since 1990, and opportunities to reduce emissions while providing for the wellbeing of our people and environment, New Zealand's 'fair share' of global reductions will be considerably more than might be calculated on a per-capita basis.

FMC believes that just and durable emissions reductions must be: across the board; real and within our control; and genuinely sustainable. Our specific policy positions should be seen in this light:

<u>Across the board</u> Emissions reductions must be seen to be fair by the citizens needed to support them long-term. This requires an aspect of looking to past behaviours, such as emission increases since 1990, and the inclusion of emission reduction targets for activities sometimes seen as 'too hard' to include, but symbolic of emission-intensive society, such as aviation, shipping, and intensive agriculture. Emissions critical to a basic standard of living should be prioritised over discretionary emissions.

<u>Real and within our control</u> New Zealand should plan to meet all emission targets domestically. Relying on offsetting emissions with purchases from other countries exposes New Zealand to an unquantifiable financial risk and complicity in schemes that may not meet ethical standards, whether now or in the future. Any element of off-setting justified by assisting other nations to reduce their emissions should instead be paid as climate reparations recognising historic emissions use.

<u>Genuinely sustainable</u> Emission reductions should be achieved through reshaping our society and energy systems rather than through the like-for-like replacement of fossil fuels with renewable energy and batteries. FMC does not believe a like-for-like transition is achievable at scale, and is concerned that over-reliance on renewable technologies and mineral extraction will export environmental damage and social conflict. Examples include the boom in lithium extraction and processing across the globe<sup>1</sup> and the damage copper and gold mining has done to Oceania's highest mountain, Puncak Jaya, and its unique ecosystems.<sup>2</sup>

# FMC position on relevant policies

Unless science and international agreements suggest further reductions are required, FMC advocates for a 50% reduction in New Zealand's emissions by 2030, to be achieved domestically. This is a more ambitious target than that currently contained with the consultation documentation.

To be easily communicated to, and understood by the public, this metric should be applied consistently across as many policies as possible.

<sup>&</sup>lt;sup>1</sup> <u>https://doi.org/10.1080/02646811.2020.1754596</u>

https://www.theguardian.com/global-development/2016/nov/02/100-bn-dollar-gold-mine-west-papuans-say -they-are-counting-the-cost-indonesia

For example, regarding transport, FMC supports: a 50% reduction in VKT by light vehicles by 2030, a target of 50% of the light vehicles fleet being zero-emissions by 2030, a target to reduce freight transport emissions by 50% by 2030, and, with emphasis, a 50% reduction in aviation and shipping emissions (compared with pre-pandemic levels) by 2030. As another example, FMC supports a target to reduce waste biogenic methane emissions 50% by 2030.

FMC supports bringing forward policy initiatives in order to achieve these targets. For example, to achieve 50% emissions reductions in the light vehicle fleet by 2030, the ban on the importation and manufacturing of internal combustion vehicles may need to be brought forward and wrecking programmes for older internal combustion vehicles may be required, as may increased fuel taxes.

FMC also supports dramatically increased investment in the electricity network and what could be considered associated services such as (overhead wire powered) regional rail, urban light rail, and trolley bus services, and in local communities seeking to reshape with active transport around the '20-minute city' concept, with the provision of local commercial areas for relocated businesses, shared workspaces, re-localised childcare opportunities, and access to public amenities, including recreational opportunities and nature.

FMC supports continued use of 'nature based solutions' as a measure to restore environmental health, reduce emissions, and provide employment, building on the "Jobs for Nature" programme. These programmes could be funded through money redeployed from tourism promotion and fossil fuel subsidisation, and through the carbon credits generated by restoration projects which will be available for purchase by business. FMC also draws attention to the excellent report prepared by Forest and Bird on the emissions that could be saved through pest control - providing employment - within our natural environment,<sup>3</sup> and to the need to halt or heavily curtail bottom trawling due to its significant carbon emissions.<sup>4</sup>

FMC emphasizes the importance of drawing a red line around our remaining natural areas, whether public or private, and preserving these at all costs. Whether we grow our economy or enter a gradual decline, we will continue to pose a threat to nature. Specifically, coal mining on public conservation land and the use of native vegetation for bio-fuel purposes should be prohibited. The native botanical cover on public conservation land presently classified as stewardship land should continue to be protected.

<sup>&</sup>lt;sup>3</sup> <u>https://www.forestandbird.org.nz/resources/climate-change-and-introduced-browsers</u>

https://www.stuff.co.nz/environment/climate-news/124581370/new-study-shows-seabed-trawling-releasesmore-carbon-dioxide-than-air-travel

# FMC's continued commitment

FMC will continue to publicly support emission reduction targets and actions, where they are across the board, real and within our control, and genuinely sustainable.

FMC will lead community conversations about what is an appropriate 21st century outdoor ethic, including the importance of making the most of local recreation opportunities, and considering layers of experience that can be accessed in local places.

FMC believes Government action in influencing and funding New Zealanders to take action themselves is crucial. Across the board, localisation, specialization, and encouraging diverse communities are vital.

Do we aspire to succeed in high performance sport, or do we want to be known as a country with rich grassroots sporting communities? Do we aspire to have 'ticked off' all the Great Walks or do we aspire to know our local places, contribute to biodiversity restoration, and acquire high levels of outdoor skills? Do we leave conservation to the professionals or do we foster the capacity of all individuals and communities to make conservation a routine part of life.

FMC is committed to helping New Zealanders do the right thing by nature generally, and with respect to carbon emissions.

Yours sincerely,

Jan Finlayson President, Federated Mountain Clubs

# Time to get on with it

What a nature-based Emissions Reduction Plan should look like for Aotearoa New Zealand: Forest & Bird submission on the *Transitioning to a low-emissions and climate-resilient future: emissions reduction plan discussion document* 



# Introduction

# **Introduction to Forest & Bird**

The Royal Forest & Bird Protection Society (Forest & Bird) is New Zealand's largest and longest-serving independent conservation organisation. Our mission is to be a voice for nature – on land, in the sea, and in our fresh waters.

Forest & Bird's constitutional purpose is to "take all reasonable steps within the power of the Society for the preservation and protection of the indigenous flora and fauna and the natural features of New Zealand."

Climate change is one of Forest & Bird's strategic priorities because of the potential impact of climate change on nature, the role that nature can play in New Zealand's climate change response and the risks posed to nature from a poorly designed climate change response. Forest & Bird has a connected priority of seeking economic transformation so that the economy supports rather than harms nature. A core principle of Forest & Bird's economic transformation priority is that transformation should adhere to just transition principles. Together these priorities and principles underpin this submission.

# Forest & Bird's frustration with the discussion document

Developing the submission has been a challenge because of substantive gaps in the discussion document. Strictly following the questions in the discussion document was insufficient to provide an informed response because of the inadequacy of key chapters (such as agriculture and forestry), the lack of concrete proposals in areas of particular significance to Forest & Bird and the absence of nature-based solutions.

The absence of significant proposals from the Department of Conservation and Ministry of Primary Industries is particularly disappointing.

### Structure of the submission

The structure of this submission roughly follows the structure of the discussion document but takes a broader view to address weaknesses in the consultation document:

- The first part provides the background to our submission, six principles for a nature-based response to climate change and some background on nature-based solutions
- The second part provides chapter by chapter feedback on the discussion document, providing some analysis of each chapter, identifying relevant advice from the Climate Change Commission and making broader recommendations before answering the questions provided in the discussion document itself.

Forest & Bird does not make comment on all parts of the discussion document but has made comments where they relate to Forest & Bird's priorities.

# Background

# Restoring nature and rescuing our climate

Humans have enormously altered native habitats, which has contributed to a warming climate and biodiversity loss. Half of New Zealand's total land area is now used for agriculture, forestry, and housing. There are more than 4000 native plants and animals threatened or at risk of extinction, nearly 13,000 hectares of indigenous habitats were destroyed from 2012-2018, continuing a declining trend, and the equivalent of 11 Auckland CBD's worth of freshwater wetlands (5400 hectares) was destroyed by human activity between 1996 and 2018 with nearly all these wetlands by area (90%) having been converted to grassland.<sup>1</sup>

New Zealand needs an Emissions Reduction Plan that builds back better from the disruption of Covid-19, and helps the country deal with the interconnected crises of biodiversity loss and the climate crisis.

We rely entirely on the health of native forests, wetlands, grasslands, pine plantations and oceans to absorb carbon, restore a more stable climate, and support the complex natural ecosystems we need to survive. We need climate solutions that protect and restore our natural world, not destroy it.

Forest & Bird was heartened by the Climate Change Commission's recognition of the need for naturebased solutions to the climate crisis. We recommend the Government focus on nature-based solutions in its approach to developing a national Emissions Reduction Plan. This briefing provides an outline of the policies and programmes the Government could adopt to deliver an Emissions Reduction Plan with nature at its heart.

## Six principles for a nature-based climate change response

Forest & Bird's proposed nature-based climate change response is based on six key principles. These principles should underpin all government action to tackle the climate crisis.

### Cut emissions first

A commitment to faster emissions reductions must come ahead of removing carbon dioxide from the atmosphere. That means producing and consuming things without generating greenhouse gases. New Zealand needs to get rid of fossil fuels from its electricity system and substantially cut agricultural emissions by reducing cow numbers and phasing out synthetic nitrogen fertilisers application as soon as possible.

### Bring Back Nature

The methods used to cut emissions must protect the health and expand the habitats of our native plants and wildlife, not destroy them. This means developing and implementing a national wetland restoration plan, no new big hydro, ending mining on conservation land, and ensuring new wind farms, biofuel production and transport infrastructure don't harm nature.

<sup>&</sup>lt;sup>1</sup> <u>ROOT-CAUSES-OF-WETLAND-LOSS-IN-NZ</u> Jan-2021.pdf (wetlandtrust.org.nz)

There should be incentives to restore permanent native forest (over exotic conifers), shrublands, natural wetlands and blue carbon.

#### Better land use

Marginal, steep and erodible land needs to be returned permanently to native forests and shrublands with active pest control allowing the greatest carbon gains. Regenerative farming is needed to cut emissions and sink carbon. There should be fewer cows.

#### Help nature help us

Success would see New Zealand place more emphasis on wetlands, blue carbon, shrublands, mangroves, and pest control. Pest control is critical to protect existing carbon stocks held within native habitats and deliver the best long-term growth in carbon storage.<sup>4</sup> Once fossil fuels are eliminated and agricultural emissions reduced, we will still need to remove carbon dioxide from the air to stabilise the climate. Nature can help us do this, but only if we protect and enable native habitats to do what they do best. A National Wetland Restoration Plan can identify where coastal wetlands can be restored allowing for carbon storage up to 57 times faster than a tropical forest.<sup>2</sup>

#### Helping each other

We are all in it together. We need a just transition that helps communities and workforces to adjust, makes sure vulnerable people are not left behind, ensures new technology and ways of working are available to all, and gives effect to Te Tiriti O Waitangi.

We must also help our Pacific neighbours to become resilient to unavoidable climate change, cut emissions, protect natural carbon sinks and develop and implement clean technology.

### Doing our fair share

New Zealand must make a stronger global commitment to cutting our emissions and helping Pacific neighbours so no-one lags behind. This is a truly global responsibility. Our targets should reflect our economic status, our ability to take action, and high current and historical per-capita emissions. Doing our fair share also means a fair distribution of domestic effort; agriculture must rapidly be brought into the emissions trading scheme (ETS). New Zealand's current climate change targets are not a fair share.

<sup>&</sup>lt;sup>2</sup> Fennessy, S.M. & Lei, G. (2018). Wetland restoration for climate change resilience. Ramsar Briefing Note No.10. Gland, Switzerland: Ramsar Convention Secretariat.

# **General Comments**

The government declared a climate emergency but it is not matching that with anywhere near enough ambition nor action. To meet the Climate Commission's targets we need to reduce emissions by 7.7Mt CO2e below the effect of current policies by 2025, the current proposals will woefully only reduce emissions by between 2.6 and 5.6 Mt CO2e. This presents a gap of 27% to 66% below the target.

The gap highlights that we can't rely on planting exotic forests alone to meet targets; the focus needs to be on actual emission reductions and enabling our best natural carbon sinks – native habitats – to thrive and permanently lock in carbon.

According to the discussion document, "The plan aims to support nature-based solutions that are good for both the climate and biodiversity" (pg. 5) but doesn't include detail on how this will be achieved. There are only 11 mentions of nature and 12 mentions of biodiversity in the whole document. In contrast, officials have done significant work in addressing transport and waste emissions.

# How restoring nature is connected to fighting climate change

New Zealand's social, cultural, and economic wellbeing relies on a healthy natural world, and benefits from natural protection from extreme weather-related events. Yet nature is in decline:

- Nearly 80% of our larger native land animals (bats, forest birds, frogs, and reptiles) are classified as either threatened with or at risk of extinction.<sup>5</sup>
- Native habitats continue to be lost, either by intentional clearance, or through the neglect of allowing continued destruction from introduced pests. Indigenous land cover area decreased by 12,869 hectares between 2012 and 2018,<sup>6</sup> 5,400 hectares of wetlands destroyed between 1996 and 2018 with 90% converted to grass.<sup>3</sup>
- Ninety-five to 99% of river length in urban, pastoral, and exotic forest areas exceeds water quality guidelines.

New Zealand can create a circle of virtue and reciprocity to help deal with both biodiversity and climate crises. When we restore and protect the complex natural ecosystems of our forests, shorelines, and mountains, we can sequester more carbon, and allow more natural resilience in the face of more extreme weather events. Nature will help us become more resilient, but only if we enable native habitats to become more resilient by restoring and protecting. This is key to addressing the Government's wellbeing priorities and protecting and enhancing natural, cultural and social capital.

#### Role of nature in providing resilience

One of the precursor agencies to the Department of Conservation, the Forest Service, protected large swathes of native forest for soil and water conservation purposes. Successive governments recognised that forests buffer the water flows that come from storm events and reduce sedimentation and erosion. This forest was called 'protection forest' because it protected downstream farms, towns, and infrastructure from floods and landslides.

<sup>&</sup>lt;sup>3</sup> https://www.wetlandtrust.org.nz/wp-content/uploads/2021/02/ROOT-CAUSES-OF-WETLAND-LOSS-IN-NZ\_Jan-2021.pdf

This is one example of how nature is our greatest inspiration and ally in providing climate change resilience. Other examples include:

- 1. coastal dunes and wetlands protecting land from storm surges
- 2. lakes and wetlands buffering extreme rainfall and river flows
- wide riverbeds and floodplains absorbing the energy of high flowing rivers, and reducing the severity of floods
- 4. mangroves reducing local ocean acidification and buffering the coast from storm surges
- 5. tussock grasslands capturing water and preventing erosion
- 6. natural catchments providing reliable, clean, water.

In each example, emissions are reduced, habitat is preserved, and effects of climate change are reduced. All native habitats in good health lock in maximum carbon. Emission reduction pathways that protect nature will deliver significant co-benefits in resilience to the impacts of climate change.

### Role of nature in carbon dioxide removal

New Zealand's natural ecosystems, like native forests, shrublands, and tussock lands, store a phenomenal amount of carbon, around 1,450 million tonnes in above-ground vegetation.<sup>8</sup> and existing freshwater wetlands are estimated to store between 22-26 million tonnes of carbon. There is potential to store an additional 198 to 234 million tonnes of carbon if freshwater wetlands were restored across New Zealand. The added benefit of wetland restoration is that emissions, created by drained peat wetlands, would cease to the tune of up to 6 per cent New Zealand's total agriculture greenhouse gas emissions per year.

Additionally, it is unknown how much coastal wetlands have been lost nationally. But we do know that these wetlands, salt marshes, sea grasses and mangroves can store carbon up to 57 times faster than a tropical forest.<sup>4</sup> Better management of land and sea provides opportunities for increased carbon dioxide removal.

We can sequester more carbon and help both climate change and biodiversity by:

- 1. protecting existing native forests, shrub-lands, and tussock-lands to maintain substantial carbon stocks
- controlling browsing pests and ending vegetation clearance to avoid destruction of native vegetation prevents emissions and maintains carbon stocks<sup>9</sup>
- 3. retiring marginal land from grazing and restoring native forest, shrub, and tussock ecosystems on those lands
- 4. improving estuarine and coastal fisheries and resource management to restore seagrass, mangroves, and kelp forests, with blue carbon storage potential,
- protecting all existing wetlands and creating a national wetland restoration plan, with an emphasis on peat and coastal wetlands

#### Risks to nature from our climate change response

<sup>&</sup>lt;sup>4</sup> Fennessy, S.M. & Lei, G. (2018). Wetland restoration for climate change resilience. Ramsar Briefing Note No.10. Gland, Switzerland: Ramsar Convention Secretariat.

A poorly designed response to climate change will create conflict with other statutory decision making and create risks for nature and biodiversity, such as:

- 1. attempting to grow resilient grasses or shrubs for fodder, which could introduce new serious weeds
- 2. inappropriate locations or trees for plantation forestry, resulting in loss of natural habitats and spread of wilding conifers
- 3. Increasing native forest logging (e.g., totara) in sites of regeneration
- 4. inappropriately located renewable energy infrastructure, causing localised or downstream habitat destruction or degradation
- 5. excessive extraction of geothermal energy, leading to loss of geothermal features and their associated rare and localised ecosystems
- 6. expansion of irrigation into areas of indigenous habitat such as tussock grasslands, resulting in damage to habitats, downstream water pollution, de-watering of rivers, and loss of mauri
- 7. relocating infrastructure, causing a loss of rare ecosystems in the new locations
- creating incentives for artificial wetland creation over natural wetland restoration resulting in a disconnect of the hydrological system, increasing the localised flood risk, inhibiting drought mitigation and limiting the carbon storage potential,<sup>5</sup>
- 9. destruction of mangroves resulting in unprotected coasts, loss of habitat, increasing carbon emissions and loss of carbon storage potential,
- 10. Hardening of coastal margins and allowing nature to become squeezed through inadequate coastal planning.
- 11. Inappropriately located mining of rare earth minerals resulting in environmental damage and pollution

The Hazardous Substances and New Organisms Act, Resource Management Act, Conservation Act and National Parks Act may all come under pressure if pathways for emission reductions involve inappropriate and environmentally damaging proposals.

Climate change responses that further destroy the interconnected living ecosystems of the planet are extremely counterproductive. The destruction of our natural world is what has led to rampant climate change in the first place. Enabling work that allows natural habitat areas to be in their best possible health is essential for protecting the complex ecosystems we rely on for clean water, air, and soil, and essential for the restoration of climate stability.

### **Protecting wetlands**

Wetlands are increasingly being recognised for their important role in carbon sequestration and storage. Peat-forming wetlands (peatlands) sequester and store carbon when healthy – that is, when they are wet and forming peat, they are a net sink of greenhouse gases. However, when peatlands are drained (e.g., for farmland), they become a net emitter of greenhouse gases, because the carbon in the dried peat reacts with oxygen and releases carbon dioxide into the atmosphere. These former peatlands continually release carbon as the dry matter decays, contributing to the annual carbon emissions. In

<sup>&</sup>lt;sup>5</sup> Carbon storage is limited in artificial wetland creation when compared to natural wetland restoration by way of the confined nature of the artificial wetland (i.e., size of wetland is controlled, water level is controlled, subsurface is artificial limiting bio-chemical processes associated with subsurface carbon storage.

addition, this land is often used for ruminant animals. This means compaction will further decrease the soil's ability to store carbon. This is all surplus to GHG emissions originating from ruminant animals.

Healthy wetlands and well-managed peat soils can make a significant contribution to our national climate change response, with healthy peat-forming wetlands storing the carbon they sequester indefinitely, as long as they remain wet (e.g., the 10,000 ha Kopuatai Bog in the Hauraki Plains has been sequestering up to 2 tC/ha/year for around the last 11,000 years). Coastal wetlands (salt marshes, sea grasses and mangroves) are known to store carbon up to 57 times faster than a tropical forest.<sup>6</sup> New Zealand has historic coastal wetlands that could be restored if we knew where they were located and had a national restoration plan in place.

Wetlands can also contribute to our resilience to the effects of climate change – by retaining soil moisture, helping maintain stream flows and recharging aquifers they are able to reduce the intensity of drought and fires. By acting like a sponge around lake edges and river margins, they can dampen the effects of high rainfall events. Coastal wetlands such as mangroves build sediment and are able to rise with the seas, providing a natural barrier for storm surges and sea level rise. Wetlands are of course an excellent source of habitat for native species.

In some circumstances, they may also offer a productive land use – whether it be through flax production and harvesting (which Aotearoa undertook extensively for some time) or other forms of paludiculture (the re-wetting of peat and cultivating wet-tolerant species like raupo and flaw for fibres or fuel).<sup>7,8</sup>

Aotearoa must create a National Wetland Plan for Protection and Restoration that creates a pathway for the needed transition away from unsustainable grazing on sinking peat soils; a plan that protects and restores freshwater and coastal wetlands; and incentivises the adoption of paludiculture on currently farmed peat soils.

## Advice of the Commission

The Commission has identified that protection of wetlands is important to protect soil carbon levels. It proposes an objective of preventing further loss of carbon from organic soils, particularly due to the degradation of drained peatlands and destruction of wetlands.

#### Forest & Bird Recommendations

Develop a national wetland restoration plan that restores damaged or destroyed natural wetlands with the goal of doubling the area of New Zealand's wetlands each decade with purposeful connectivity between them.

 <sup>&</sup>lt;sup>6</sup> Fennessy, S.M. & Lei, G. (2018). Wetland restoration for climate change resilience. Ramsar Briefing Note No.10. Gland, Switzerland: Ramsar Convention Secretariat. <u>bn10 restoration climate change e.pdf (ramsar.org)</u>
 <sup>7</sup> New Zealand has a wetland scientist specializing in paludiculture, Dr. Brian Sorrell, based in Denmark. He recently presented: <u>Dr Brian Sorrell - Key note presentation on Paludiculture for the National Wetland Trust AGM - August 2020 on Vimeo</u>.

<sup>&</sup>lt;sup>8</sup> Abel, S., Couwenberg, J., Dahms, T. & Joosten, H. (2013): The Database of Potential Paludiculture Plants (DPPP). – Plant Div. Evol. 130: 219–228. <u>MoorWissen | Paludiculture | Databases | DPPP - Database of</u> <u>potential paludiculture plants</u>

 Include a national map of historic wetlands, both freshwater and coastal (salt marsh, mangrove, and sea grass) for reference in regional target setting and carbon storage potential calculations.

Act on the recommendations of the Parliamentary Commissioner for the Environment's report into estuarine environments (which includes coastal wetlands such as mangroves and saltmarshes) – that is:

- Make the inclusion of estuaries as part of freshwater management units mandatory within the National Policy Statement for Freshwater Management
- Develop and make mandatory a standardised and consistent approach to collecting, managing, and analysing data on estuarine environments, and make that data public

Include stronger protection for wetlands in the legislation that replaces the Resource Management Act.

Retain the NPS-FM and National Environmental Standard wetland provisions, and do not allow those documents to be modified in a way that would result in the loss of wetland extent or values.

Fund MPI's soil mapping project to inform land management and help identify wetlands at a scale that matches or improves data as required under the new NPS-FM 2020.

Encourage councils to implement and enforce prohibitions on wetland clearance in the NPS-FM 2020 and fund compliance, monitoring, and enforcement, as well as restoration projects.

Include carbon gains/losses from peatlands in New Zealand national carbon accounting.

Provide financial incentives for agricultural conversions that move away from draining and grazing peat wetlands to fibre production through paludiculture (the re-wetting of peat and cultivating wet-tolerant species to create products with small carbon and pollution footprints).<sup>9</sup>

## Oceans and blue carbon

Marine life, such as seagrass, seaweeds, coastal mangrove forests and shell forming organisms have the potential to remove and store substantial amounts of carbon. Bottom trawling methods of fishing can release carbon back into the atmosphere by disturbing the seabed and releasing stored methane. Lack of good data has meant that the Commission deferred making recommendations, however there are actions the Government can undertake already.

The Whanganui Inlet is about 13km in length and houses Farewell Spit which is New Zealand's largest area of seagrass.<sup>10,11</sup> This area is an important example of the blue carbon already being stored in salt marshes and seagrasses. There is further carbon storage potential here as new sediment and sand arrives to the system and allows for storage in those mediums as well as the growth of new plant life.

<sup>&</sup>lt;sup>9</sup> New Zealand has a wetland scientist specializing in paludiculture, Dr. Brian Sorrell, based in Denmark. He recently presented: <u>Dr Brian Sorrell - Key note presentation on Paludiculture for the National Wetland Trust AGM - August</u> 2020 on Vimeo.

<sup>&</sup>lt;sup>10</sup> Whanganui Inlet - Wikipedia

<sup>&</sup>lt;sup>11</sup> Nelson Tasman hosts NZ's first blue Carbon Workshop (tet.org.nz)

Currently, the Government is unaware of the location and extent of historical coastal wetlands, this includes mangroves, salt marshes and seagrasses. Without this knowledge, we are missing out on a nature-based solution. By restoring historically destroyed and degraded coastal wetlands, carbon storage could be achieved, offsetting emissions.

### Advice of the Commission

The Climate Change Commission notes that marine protection can help maintain stores of carbon such as sea grasses, salt marshes and marine sediment such as in mangroves. It notes a recent study showing that stored carbon can be released from the seafloor from bottom trawling.

The Commission recommends more work be done to understand and quantify marine carbon stores, sinks and sources. The Government can go further and take immediate steps now to safeguard marine carbon and improve marine sequestration.

### Forest & Bird Recommendations

Consider the role of marine species and habitats in storing carbon within the Hauraki Gulf ecosystem when developing the Hauraki Gulf Fisheries Plan.

Explicitly consider climate change as an environmental effect of fishing in all Fisheries Act decisions.

Address emissions from fishing and the impact of fishing on marine carbon storage in the development of the Fishing Industry Transformation Plan.

End bottom trawling to reduce emissions from seafloor damage.

Ensure the replacement legislation to the Resource Management Act protects blue carbon, including mangroves, salt marshes and seagrass beds.

Include the protection of blue carbon within the proposed replacement to the Marine Reserves Act.

Build a national map with calculations on existing and historical coastal carbon storage (salt marshes, sea grasses, mangroves, and sediments).

# Meeting the net-zero challenge

Forest & Bird welcomes the commitment to a just transition in the discussion document. It will be important to involve local communities and unions in developing plans to drive this transition.

There is good rhetoric in the discussion document on helping nature to thrive, and supporting the wellbeing of communities and people but little in the way of means to do this. A major gap in the discussion document is the absence of any references to the objectives and milestones in Te Mana o te Taiao, a number of which are relevant to the development of the Emissions Reduction Plan. The nature-based solutions need to be firmly embedded in Te Mana o te Taiao, and there needs to be clear financial pathways to show how this will be delivered. The final plan should identify the relevant objectives and milestones of Te Mana o te Taiao and show how it is contributing to delivery of the strategy

### Consultation Questions – Meeting the net-zero pathway

Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above, the correct ones? Please explain why or why not.

Forest & Bird has outlined principles above that should guide the Emissions Reduction Plan.

# How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

The electricity market may need reform to remove structural barriers to decarbonisation. Huntly should be closed in order to drive a shift in investment. Consideration should be given to allowing flexibility in the renewable electricity target so that full decarbonisation of the electricity sector does not come at the price of deferring decarbonisation of stationary energy and transport due to excessive electricity prices.

Social barriers to emission reductions within the agricultural sector need to be addressed given that zero-cost and profitable emission reductions in that sector are not materialising. This needs to be backed by a price on agricultural emissions.

# In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

Implementation of recommendations in this submission will significantly add to emission reductions and carbon storage

## How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

Implementing the recommendations in this submission will result in the adoption of nature-based solutions. A key step will be to establish a system of fair, ethical and appropriate incentives to encourage the restoration of natural systems. This should be matched with pricing agricultural emissions to create an incentive for land use change in favour of nature-based solutions.

Reform of fisheries management will drive greater protection and restoration of blue carbon. Wetland protection and restoration will store carbon, provide habitat and allow for reduced intensity of the effects of climate change (e.g., barrier to storm surges and sea level rise, drought and flood intensity reduction).

There needs to be a communication roll out in many media forums and within education that highlights the actions being taken, what needs to be done and why. This key to get the public understanding and a culture shift necessary for best possible ongoing outcomes. It will also give people hope that what they do can make a difference along with the larger national actions underway.

# Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

The nature-based solutions proposed in this submission

Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

Actions that undermine the nature-based solutions recommended in this submission

# Making an equitable transition

Forest & Bird broadly agrees with the approach outlined here. It will be particularly important to listen to the voices of those who frequently face the brunt of policy change. Transition often focusses on the business management and ownership of sectors undergoing transition, but it is employees and the communities that remain behind that are usually most affected and there is often misalignment between the interests of business owners. employees and affected communities. For example, mining company owners may wish to avoid the cost of clean-up and to protect the capital value of investments; tradespeople working in mining may need alternative forms of comparable work and affected communities may need new ways on earning revenue and deal with a reduced population or reduced purchasing power.

# Government accountability and coordination

In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure the government is held accountable?

The Environmental Indicators programme should report on the environmental outcomes anticipated by the Emissions Reduction Plan. The Government should consult annually on performance towards the outcomes anticipated in the Emissions Reduction Plan. All actions should be specific, measurable and timebound.

# How can new ways of working together like mission-oriented innovation help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climate-resilient economy?

Private landowners, local government, central government agencies and Māori landowners which seek to restore natural ecosystems and to keep deer, pigs, goats and possums to the lowest possible numbers could co-ordinate bids, reporting and benefits.

Industries such as abattoirs and sewage treatment could partner with forest regeneration projects to speed the growth of trees in regeneration.

# Funding and financing

### **Consultation Questions - Funding and financing**

# What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?

The subsidy provided by free allocation and exemptions from the emissions trading scheme distort investment in favour of higher emitting activities.

What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

The Government should ensure that all public sector investments are in low emissions activities. This includes financing of ACC and the Superannuation Fund and state-owned enterprise financing. State Owned Enterprises should be directed to drive investment towards low emissions activities.

#### Is there anything else you wish to share in relation to funding and financing?

Buying international carbon credits should be a last resort and should only be used for carbon credits that deliver measurable reductions in emissions, protect biodiversity and uphold human rights. Particular care should be taken to ensure that offshore carbon credits do not result in dispossession or the theft of the property and rights of indigenous peoples and other vulnerable groups.

# **Emissions pricing**

Forest & Bird wants to see a significant improvement in emissions pricing including:

- Faster phase out of free allocation
- Entry of agriculture into the ETS
- Much more stringent trade exposure tests

## Do you agree the treatment of forestry in the New Zealand Emissions Trading Scheme (NZ ETS) should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

The order of priority should be emission reductions first and removals second. New Zealand's emphasis on low-cost removals via plantation forestry has caused gross emissions to keep rising by deferring reductions. This is making it increasingly expensive for New Zealand to achieve a fair share of global effort and this creates strategic risk.

New Zealand needs to fully decarbonise. Forest & Bird agrees with the Climate Change Commission that there is a role for plantation forestry as providing a renewable resource for a circular economy but carbon storage should primarily occur in natural systems.

# What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider to ensure we do not unnecessarily restrict forest planting?

Forest & Bird would support limiting the number of forestry units that can be surrendered to offset emissions. Forest & Bird would also support reducing the rate at which carbon credits can be earned by foresters as this would also have the benefit of rebalancing the incentives for plantation forestry relative to natural carbon sinks and therefore achieve multiple policy objectives.

Landuse flexibility should not be a policy objective with the changes to forestry as this in practice means tilting the field in favour of higher emitting land uses: restrictions on forestry should be tied to emissions pricing across the agriculture sector.

#### Are there any other views you wish to share in relation to emissions pricing?

Agriculture needs to enter the ETS and free allocation across all sectors should be phased out as fast as possible while being consistent with just transition principles. Trade exposure tests need to be tightened significantly to be based on a realistic assessment of actual trade exposure risk, the national

interest in not subsidising high emitting activities any longer than is absolutely necessary to deliver a just transition and a proper assessment of the markets in which trade exposed sectors operate. For example, the food sector is broad and if high emitting sectors like dairy and in competition with plant-based alternatives then there is little or no actual risk of carbon leakage.

Current treatment of trade exposure in the ETS means that steel and concrete manufacturing are subsidised with free allocation. This approach assumes that emissions leakage to higher emissions manufacturers off-shore is the inevitable result of applying a more stringent emissions obligation. However.

- The test for trade exposure does not require the manufacturer to demonstrate world's best practice
- Manufacturers of concrete and steel also compete with domestic lower emission manufacturers such as wood processors

To qualify for trade exposure subsidies building material manufacturers must be required to demonstrate they are operating at world's best practice, that there is a need that cannot be fulfilled by other lower emission products and the subsidy should only apply to extent necessary to facilitate a just transition to low emissions materials.

Continuing the subsidy provided to concrete and steel will distort market supply in favour of those products and against more sustainable products. This will delay the transition. ETS subsidies should be phased out as quickly as is consistent with a managed, just, transition.

# Planning

This section of the discussion document places a heavy reliance on yet-to-be settled RMA reforms. It will be important that the replacement legislation reflects the Forest & Bird feedback in the reform process if it is to contribute to the emission reductions that New Zealand needs to deliver. It should be noted that spatial planning, freshwater management and biodiversity protection all contribute to emission reductions, alongside climate-specific provisions.

#### **Consultation Questions - Planning**

In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

Marine spatial planning, marine protection and fisheries management can all enhance carbon storage in the marine environment or drive increased emissions. Climate change needs to be an explicit consideration across all marine management.

# What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

See the regulatory and non-regulatory recommendations in this submission in relation to land use and marine management, particularly those that protect and restore ecosystems.

#### Are there any other views you wish to share in relation to planning?

Urban intensification needs to be carried out with considerable care and areas with significant biodiversity must be safeguarded. This applies also to mining and quarrying materials for construction.

# Research, science and innovation

There is very little thought gone into the kinds of research needed to support the widespread adoption of nature-based solutions. Examples of what is missing includes:

- Opportunities for blue carbon storage
- Habitat mapping, including mapping existing fresh water and coastal marine/estuarine wetlands
- Measuring carbon storage and carbon flows in natural ecosystems, including forests

There is also a need for social research into behaviour change, particularly for agricultural and land use practices and Laboure market and demographic research to support a just transition

# What are the big challenges, particularly around technology, that a mission-based approach could help solve?

Many of the big challenges are less about technology and more about managing natural systems to restore and enhance their potential for long-term carbon storage. There needs to be a dedicated programme on this.

How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?

## What opportunities are there in areas where Aotearoa has a unique global advantage in lowemissions abatement?

New Zealand already has a global reputation for protected species management. New Zealand could be a world leader in ways of restoring and protecting natural carbon stocks. This would contribute to solving the world's problem with overshoot as well as develop resilience for Pacific partners.

# Behaviour change – empowering action

Establishing regionally based climate action forums would be really useful. Empowering and resourcing communities – especially those interested in active change. They need to have some sort of mandate to help drive change.

There are serious issues with uptake of climate change action in some rural communities and industry sectors. Significant effort needs to go into addressing the barriers to action in rural communities.

Clear, robust and well signalled regulation will help drive behaviour change. Expectations of future regulation can create a significant incentive or disincentive for behaviour change – it will be important for the Government to signal to reluctant sectors such as agriculture that climate change regulations are inevitable to prevent strategic behaviour.

# Moving Aotearoa to a circular economy

Forest & Bird welcomes discussion of creating a move to a circular economy and the related concept of a bioeconomy. This reflects that growing biomass is likely to be critical for a circular economy as both a material feedstock and as an energy source. Forest & Bird seeks to be closely consulted in any further work in this area to ensure any downside risks to nature and the management of natural ecosystems are avoided. For example, it will important to ensure that weedy species are not planted to provide a supply of biomass.

# **Transitioning key sectors**

This section of the discussion document was notable for its heavy emphasis on transport, energy and waste, the relatively limited treatment of all land use sections and the near absence of nature-based solutions.

Forest & Bird's submission is primarily directed towards energy, land-use and nature-based solutions.

# Transport

It will be important to ensure that changes to transport infrastructure do not damage natural areas or cause damage to the habitats of native species.

# Energy and industry

Forest & Bird is very disappointed that there is no proposal to ban new coal mining in the emissions reduction plan. Rather than concrete action of banning coal mining the proposals seems intent on developing some new reports and plans. More well-intentioned paperwork won't keep polluting coal in the ground or drive a transition to new renewable energy with a low biodiversity impact.

A simple change to the Crown Minerals Act is needed to ban new or expanded coal mines and bring New Zealand into the 21<sup>st</sup> century.

Forest & Bird supports the approach of having the 100% electricity target by 2030 as aspirational with a view to review this in 2025 after the NZ Battery Project has had a chance to look at options in more detail. The Government should create certainty by ruling out Onslow.

The energy strategy must resolve conflicts between the location of new renewable infrastructure and the threat it can pose to biodiversity already in crisis. This conflict must be resolved in a way that helps turn the tide of biodiversity loss rather than deepening the crisis.

Forest & Bird has a range of specific recommendations that do not readily fit within the structure of the discussion document and so are given below.

## Increased renewable energy and climate-friendly infrastructure

Forest & Bird supports a strategic planning approach in line with our submission to the RMA review panel. It is important that this planning takes a nature-first approach so that decisions about our climate response does not inadvertently deepen the biodiversity crisis.

Any 30-year infrastructure plan must avoid placing infrastructure into sensitive environments or where there are protected or at-risk species. Wherever possible, nature-based solutions, such as swales for

stormwater, protection of source water quality, or providing room for rivers, should be considered above costly hard engineering.

Forest & Bird notes that the Commission anticipates new capacity would primarily come from wind and solar. To manage risk, the Commission anticipates that wind generation would be widely dispersed across the country.

Too many wild rivers have already been lost to large scale hydro development in Aotearoa. Forest & Bird does not support any more destructive hydro-electricity developments.

#### **Recommendation:**

Adopt a strategic national spatial planning approach to new wind and solar farms so that the expansion of wind not only meets requirements for being sited for good wind and solar resources and risk management, but also so that it avoids harm to nature and to sensitive landscapes.

Defund infrastructure projects that will increase emissions.

# **Biofuels**

New Zealand already has an expensive problem with wilding conifers. The development of new biofuels must avoid using or introducing crops that could become weedy. Harvesting regimes must not adversely impact on water quality. Fast growing and resilient plants that can become sources of fibre for biofuels, by their nature, will have a propensity to become weeds.

### Forest & Bird Recommendations

Except when sourced from waste materials, plant material from species that pose significant biosecurity risks (such as being on Plant Pest Information Network database) should be ineligible for inclusion in New Zealand's fuel supply

New organisms under the definition of the Hazardous Substances and New Organisms Act should not be eligible for consideration as biofuels

### Coal

The Government should take decisive action to ensure there are no new or expanded coal mines from 2021, as per the net zero 2050 roadmap of the International Energy Agency. Mine development often takes a decade or more, and any new or expanded coal mines initiated in New Zealand today risks either locking-in emissions, or becoming stranded assets and environmental and fiscal liabilities. As other countries end coal use there is an increased risk that the costs of decommissioning and cleaning up abandoned coal mines will fall on the Crown.

Ending coal mining, especially on public conservation land, will have significant co-benefits for the environment, by preventing damage to public conservation land and avoiding water pollution.

#### Advice of the Commission

The Commission focuses on demand-side policy for phasing out coal (focusing on ending the use of coal rather than its extraction). The Commission proposes that the Government phase out use of coal in

electricity as soon as possible, and eliminate coal use in commercial and public buildings by 2030. It proposes converting low- and medium-process heat plants to eliminate coal use in food processing before 2040. This needs to be supported by supply side policy aimed at preventing the establishment of new coal mining operations as these will lock in emissions for decades.

#### Forest & Bird Recommendations

Amend the Resource Management Act and ensure the proposed Natural and Built Environment Act prohibit resource consents being granted for new or expanded coal mines across New Zealand.

Amend the Crown Minerals Act to prohibit new or renewed coal permits being granted across New Zealand.

Develop a transition plan to phase out existing coal mining, and oil and gas drilling and to reduce regional and national demand for fossil fuel extraction, while addressing the needs of affected communities and those dependent on mining.

## Managing dry year risk

Dry year risk has been identified as an issue for moving to a fully renewable, low carbon electricity system. Addressing this through the construction of a single large pumped storage system and raising Lake Onslow would be extremely expensive and have unacceptable environmental impacts. The proposal would destroy nationally and regionally important wetlands as well as the habitats of rare and threatened plant and animal species.

The Tekapo/Pukaki hydroelectric scheme was designed with pumped storage in mind and should be investigated as a potential low impact form of pumped storage for managing dry year risk.

The Government should consider alternatives, including retaining a residual role for gas as a dry year back up until technology and improvements in the electricity system adequately solve the dry year risk. Demand-side measures should be prioritised over large-scale supply side infrastructure where that infrastructure would harm nature.

### Advice of the Commission

Forest & Bird particularly notes that the Commission expressed caution about the relative cost of relying on massive pumped storage to eliminate the final few emissions from the electricity sector.

The Commission recognises that dry year risk needs to be addressed but warns that increasing water storage (such as proposed multi-billion-dollar Lake Onslow pumped storage project) could be very expensive, environmentally damaging, the relative emissions from keeping a back-up supply of gas would be relatively small and that it might be better to prioritise other emission reductions.

The Commission proposes that the Government consider modifying its present 100% renewable electricity target to become a 98% renewable electricity target. The Commission notes that the cost of pumped storage would require increasing electricity prices so a 100% renewable electricity target might simply prevent firms from electrifying their energy use, leading to higher overall emissions.

#### Forest & Bird Recommendations

Develop a programme to encourage distributed generation.

Review the structure and operation of the electricity system, including ownership and market operations to minimise dry year risk.

Investigate the use of existing hydro lakes for pumped storage, including Tekapo/Pukaki.

Ensure any solutions support an overall reduction in greenhouse gas emissions.

#### **Consultation Questions - Energy and industry**

# In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

The strategy should address the issues identified above and in particular:

- Operationalise a ban on new coal mines
- Resolve conflict between the location of new renewable electricity and the risk it poses to biodiversity and natural ecosystems
- Have a structured plan for the phase out of fossil fuels

#### What areas require clear signaling to set a pathway for transition?

The areas that require clear signaling to set a pathway for transition include:

- Confirmation that no new coal mines will be established and no existing coal mines will be expanded as per our comments above
- A pathway for phasing out gas
- A spatial plan to determine where and at what scale new renewable energy is appropriate

# Setting targets for the energy system: What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

There should be some flexibility with the renewable electricity target to ensure that achieving this target doesn't have the effect of postponing the decarbonisation of stationary energy and transport and t ensure that new renewable energy does not harm nature.

# Phasing out fossil gas while maintaining consumer wellbeing and security of supply: What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Fossil gas should be phased out at a rate that enables demand to be met through a combination of low impact new renewables, transition to a more environmentally efficient electricity market and the uptake of energy efficiency measures

How can work under way to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

Ensure that the renewable electricity target doesn't postpone decarbonisation of the industrial sector

Are there any other views you wish to share in relation to energy?

It will be important to ensure that growing the feedstock for bioenergy does not create new weed/biosecurity problems and that harvest is done in a way that does not cause freshwater pollution.

# Agriculture

New Zealand's current policy settings mostly protect our largest source of emissions from responsibility for its emissions. This means that the remainder of the economy must pick up the slack. Beyond efficiency gains, the Government needs to explicitly acknowledge that land use change is both desirable and inevitable. Dairying is exceeding the local environmental carrying capacity in some places and so is likely to shrink as it is brought back into line with environmental limits, particularly as freshwater policies take effect.

A net change in nationwide land-use overall from high emission forms of production to lower emissions forms of production is needed. This would most likely be achieved through a reduction in dairy production in areas where it exceeds environmental limits and the expansion of permanent native forests and other natural ecosystems to provide permanent carbon storage.

Direct control of inputs (especially supplementary feed and synthetic/mined fertilisers) that help drive greater emissions through intensification

The current approach makes very little economic sense as it:

- Distorts investment towards increasing emissions and away from activities that might reduce emissions and so acts against the country's overall policy goals
- Fails to recognise that in some parts of New Zealand the dairy sector already exceeds the carrying capacity of the local environment
- it deprives our society of the co-benefits from reducing agricultural emissions (reductions in excess nitrogen benefit both the atmosphere and water as some excess nitrates go to air, while others go to water)
- Changing farming systems to 'optimise' them within environmental limits is likely to increase
  profitability and resilience for many farmers, while significantly reducing methane and carbon
  dioxide emissions, nutrient leaching, and the reliance on bought-in feeds and external inputs
  that have a high carbon footprint.

There is increasing evidence that moderate changes to farm management, identified using the 'Environ-Economic Model' (E2M), can deliver significantly increased profits for farmers, while reducing emissions and nutrient leaching. Farm optimisation with the E2M model offers enormous potential to reduce the environmental impact of agriculture in New Zealand – through reductions in leaching, more efficient use of fertiliser and irrigation water, reductions in herd size and soil compaction rates, and most importantly, through reductions in greenhouse gas emissions (Appendix One).

#### Advice of the Commission

The commission proposes:

- Pricing agricultural emissions
- Supporting farmers and growers to identify and make changes on farm to reduce emissions
- Supporting better land-use decisions to create options for greater reductions in future

#### Forest & Bird Recommendations

#### Introduce agriculture into the ETS

Develop a programme to support farmers to convert to low input and regenerative agriculture systems to reverse biodiversity loss, improve soil carbon retention and water management, and reduce nitrous oxide emissions.

Invest in the further development and use of the E2M model by

- Investing directly in the model itself to increase its capability and capacity
- Rolling-out its use within Pāmu/Landcorp as a State-owned Enterprise
- Increasing its accessibility to all farmers, such as by making it available as a publiclyfunded tool and by funding the training of farm advisors (e.g., Landcare Trust staff) and case-studies in its use

Make OverseerFM opensource and public, opening research and development and integration opportunities for others in the agricultural industry

Direct Pāmu to trial, and roll out at scale, methods for reducing emissions from land-use so that it becomes the best practice climate leader for agriculture, forestry and carbon storage from land-use in Aotearoa.

Phase out the use of synthetic nitrogen fertiliser in Aotearoa NZ.

### **Consultation Questions - Agriculture**

# How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?

Create regulations that:

- Bring agricultural emissions into the ETS.
- Require acknowledgment of reduced carbon benefits due to continually drained historic wetlands that are maintained as drained through underground infrastructure (e.g., drainage pipes) and above ground infrastructure (e.g., pumps) which allow grazing and farming on former wetlands.
- Make pest control, native planting, riparian planting, wetland mapping and wetland protection an asset to on-farm carbon accounting.
- Incentivise natural wetland restoration over artificial wetland construction.

#### How could the Government support the specific needs of Māori-collective land owners?

The Crown cshould actively support Māori collective landowners to utilise land in ways that build resilience, store carbon and cut emissions.

# What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

The ETS must include agriculture as part of a system of fair emissions pricing across all sectors of the economy. Forest & Bird does not agree with subsidising the industry responsible for the biggest share of

emissions. The Government must require the agriculture industry, particularly the dairy industry, to contribute their fair share of greenhouse gas emission reductions.

In the short term the Government could encourage farmers to shift to low input agricultural systems by providing a nationwide network of farm advisors and by requiring Pāmu to shift to low input forms of agriculture.

#### What research and development on mitigations should Government and the sector be supporting?

Much of what the agriculture industry needs to reduce emissions does not rely on significant new research. There are now reasonable amounts of evidence about the effectiveness of low input farming systems and New Zealand needs to reduce stock numbers for both climate and freshwater management reasons; in some parts of New Zealand stock numbers exceed the carrying capacity of the land.

It is too late to postpone action in the hope of discovering a magic bullet in the future, the time for that was more than two decades ago when the agriculture sector was still in denial over whether climate change was even happening.

Research should be prioritised to support the move to low-input agricultural systems.

# How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Set a global standard in externality accounting. This refers to all the subsidies provided by the environment (on loan from future generations) to produce a product. Current and future generations want to buy products that truly account for and reduce environmental damage. If they were able to know that a product is net gain for the environment rather than net loss, they would be more likely to purchase the product.

How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

### Wetlands

The agriculture sector is pouring millions of dollars into constructing artificial wetlands. There must be information and incentives for choosing restoration of damaged or drained wetlands over the construction of artificial wetlands. Artificial wetlands are limited in size and are usually lined with an artificial material. Additionally, the location is not always properly integrated into the hydrology system of the catchment. Therefore, the disadvantage to artificial wetlands is a reduced potential for greenhouse gas removal and reduced capacity for reducing the effects of climate change (i.e., drought and flood event intensity).

#### Paludiculture

Paludiculture potentially offers farmers a way to re-wet drained peat wetlands and create a net sink of greenhouse gases by ending the oxidation of peat and restarting carbon accumulation. Where ruminant animals are removed from the land to support this process further emission reductions could be achieved. New Zealand native fibres such as raupo and harekeke (flax) are plants that have been studied internationally and are regarded as ideal fibres for paludiculture

Care will need to be taken to adapt paludiculture to New Zealand's unique ecology. It will be important to use native species and to prevent the introduction of potentially invasive wetland plants from overseas. Careful consideration will need to go into harvesting regimes to avoid some of the concerns that have occurred, for example with the harvest of sphagnum moss.

#### Are there any other views you wish to share in relation to agriculture?

In practice New Zealand will continue to fail to do a fair share of global efforts until it properly addresses agricultural emissions, and to do that it will need to introduce a price across the agriculture sector that is sufficient to drive land-use change.

The non-price barrier proposals provided here will nominally contribute to change but are not sufficient. With regards to the scale of change that is needed, New Zealand cannot rely on untested future developments (e.g., in nitrogen reducing vaccines, or breeding cows with climate friendly digestive systems). Action taken over the next decade will be particularly important to stay within the 1.5-degree target that the Government has adopted.

Much of the farming sector presently exceeds the carrying capacity of the environment, meaning that they rely on subsidies from the air, water, soil, native biodiversity and future climate to maintain a profit or secure a capital gain. The level of change that is needed by the agriculture industry must reflect the existential risk posed by climate change.

The agriculture industry must enter into the Emissions Trading Scheme. Forest & Bird regards this change as necessary, inevitable and beneficial.

# Waste

New Zealand needs to move to a highly circular infrastructure and housing material economy. Mining and quarrying sectors threaten biodiversity in-situ, the drive for these activities is the need to provide composite material for infrastructure and housing.

For example, one of the drivers for weakening wetland protections in proposed changes to the NES-F are to take effect is to allow quarrying for construction activities. However, the protection of all existing wetlands should be a key part of New Zealand's climate response. Likewise, the consultation document on the NES-F states that *"mined minerals [in New Zealand such as gold, platinum group metals, nickel, copper and tungsten] may contribute to clean technologies as part of the transition to a low emissions economy."* Any design of low emissions economy must incorporate into its design the recovery of materials from the existing materials above the surface. It is necessary to build a circular economy to reduce the risk of mining activities destroying natural habitats and exacerbating climate change.

Forest & Bird supports the deconstruction model for recovery and reuse of building materials. We support scenario 1 on LFG systems to ensure that the incentive is towards removing organic waste from the mixed landfill system.

# Forestry

### **Native Forests**

New Zealand's natural ecosystems store many billions of tonnes of carbon. Their sheer size means that even small changes to their condition can have a massive impact on the country's greenhouse gas emissions profile. The Commission Climate Change Commission identified 1.2-1.4 million hectares of erosion prone land. Government policy should ensure that all of this land is reverting to native forest or other native ecosystems by 2050.

All of New Zealand's natural terrestrial ecosystems are under stress from feral introduced mammalian herbivores which are responsible for emitting between 2.3 and 4.0 MtCO2e per annum (direct biomass consumption and methane production). Kamahi-podocarp forests are showing a particularly significant decline. which may be the result of introduced herbivores.

Key pests are: deer, goats, pigs, possums, tahr and wallabies. In native forests, possums attack from the top while deer, pigs and goats tear about the habitat from the bottom. All this damage inflicts three major climate impacts: a) methane release from introduced browsers and b) CO2 release from degraded and collapsing habitats and 3) future carbon sinks being eaten.



Forest & Bird supports an approach of focusing on new and restored permanent native forest sinks to create a long-lived source of carbon removals rather than plantation forestry which can have negative outcomes for soil health, landscapes, and pose fire risks. This would have significant co-benefits in terms of water quality, erosion protection, native biodiversity and human and natural resilience.

As mentioned above, Forest & Bird considers removal of pest animals to be additional to decarbonisation of the economy - and an advantage unique to Aotearoa. In practice we need to do everything we can to ensure that native forests and ecosystems can restore themselves naturally and to ensure as much biological diversity as possible.

#### Advice of the Commission

The Commission proposes a change in emphasis away from relying on plantation forest for long term carbon storage and instead to rely on permanent native forest for long term storage. The three key elements in the Commission's approach are:

- limiting plantation forestry's access to carbon markets
- encouraging large scale replanting and restoration of native forests
- protecting forests from introduced browsing pests

In particular the Commission proposes:

- comprehensive national programme to incentivise reversion and planting of new native forests
- reduce reliance on forestry removals (pines as carbon sink)
- managing browsing pests in an integrated way to ensure native forests are established and all native habitat carbon sinks are maintained long term
- protect and increase carbon stocks of pre-1990 native forests with fire and pest control

### Forest & Bird Recommendations

Expand browsing pest control to:

- Reduce possum, feral deer, goats (including tahr and chamois), wallabies and pigs on all Department of Conservation, Defence and State-Owned Enterprise managed land to lowest practicable numbers.
- Maintain all existing deer free areas in places like Coromandel and Northland.
- Reduce feral browsing mammals on land under Land Information New Zealand control to comply with the Land Act.
- Eradicate wallabies from Aotearoa New Zealand entirely.
- Control tahr to a level that complies with the Himalayan Tahr Control Plan 1993 and the National Parks Act.

Establish a programme to deliver the restoration of native vegetation cover across all marginal and erodible land in New Zealand. This programme would need to include:

- Support to scale up private and public pest control
- Sound ecological advice and indicators
- A financial flow to landowners for restoring native vegetation in perpetuity
- Crown buy-out of land that lacks an economic land use and that has significant biodiversity
- Restoring native ecosystems on degraded Crown land, including any degraded stewardship land

Gazette and Implement the National Policy Statement on Indigenous Biodiversity to end native vegetation clearance on private land

Support planting of permanent indigenous forests by:

- Restricting areas where exotic carbon forests can be planted
- Providing biodiversity credits to recognise the benefits of native forest restoration and even the economic return (I.e., difference between ETS returns from exotics vs. natives)

# **Consultation Questions - Forestry**

### Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

Exotic plantations should primarily provide materials for a circular economy, long term carbon storage should be in protected and restored native forests, shrublands, tussock lands, .wetlands and blue carbon.

New Zealand's current climate change commitments are inadequate and so long-term storage should be used to increase our ambition rather than provide a buffer for under delivery. The solution to under delivery is to ensure that no sector is protected from taking responsibility for its emissions.

# What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?

The Government should look at tools to increase local manufacturing from timber as part of a transition to a circular economy, as part of this the Government should consider the trade aspects of the market for wood that sees much unprocessed timber go offshore and the extent to which high emissions materials such as concrete and steel are subsidised under the ETS.

# What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

There needs to be a comprehensive package of measures:

- Incentive system for restoration and planting
  - o Rates relief
  - Pricing combination of ETS and public biodiversity good
  - o Ecological advice and support, e.g., pest/weed control
  - o Fencing support
  - o Regional community-based education profile programme
- Reducing the rate at which plantation forestry gains credits
- Gazette the NPS on Indigenous Biodiversity, especially complementary measures
- Gazette the NPS on Freshwater
- Update National Environmental Standards for Plantation Forestry
- Browsing pest control on all public lands
- Weed control on any adjacent public lands
- Ambitious targets for regeneration and replanting
- Support for capacity building
- Financial disincentives for poor plantation forestry practices, e.g., wilding conifer control

# What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

Long rotation native and exotic species, separate or mixed, makes sense for a future timber industry. Even better if other crops like honey, fungi, etc. can be factored into planning. Care needs to be taken to protect local genetic diversity of native species.

The principle of 'If you wish to cut down a tree, first you must plant it' should govern future harvest of forest. It is important to recognise the importance of allowing regenerating forests to mature to large old trees because they become centres of biodiversity., such as providing nesting sites for avian dispersers. Regenerating native forests need protection from logging because these are areas of ecological recovery.

Current regulations on collecting seed from natural areas to assist with regeneration efforts need review to ensure that they enable the scaling up of restoration while not compromising ecological processes or local genetic diversity.

# Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?

Permanent forest for carbon storage should be primarily native forests because, although their sequestration rates may be slower than introduced conifers, the long-term storage capacity of these forests is greater.

Caution should be exercised over the use of fast-growing exotics as a permanent forest cover. Weedy species should be actively discouraged. The establishment of exotic forests should be prohibited in areas of native biodiversity, included degraded natural ecosystems that could be restored. Growers should be responsible for any weed risk that their forests pose.

# What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

The capacity of local nurseries to grow trees for permanent forest sinks and timber crops needs to be significantly increased. This must be based on eco-sourcing of local seed for native forest plantings and regeneration.. Already the genetics of manuka are being mixed by nurseries collecting seed from around the country and selling plants of mixed origin to customers - this has the potential to weaken the genetic diversity of native species, create genetic bottle necks and increase vulnerability to new pests and diseases.

It's important to **not** allow logging in regenerating, recovering forest areas or this could open the floodgates to large scale old-growth native forest logging again and create a market that is likely to be partly supplied by illegally logged native forest.

# If we used more wood and wood residues from our forests to replace high emitting products and energy sources, would you support more afforestation? Why or why not?

Forest & Bird supports the use of wood waste to partly replace fossil fuels. This does not in any way alter the requirement to apply land use planning and management principles to the planting, maintenance and harvest of forests.

### What role do you think should be played by:

- central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment?
- the private sector in influencing the location and scale of afforestation?

#### Please provide reasons for your answer.

The primary driver influencing the location and scale of afforestation should be public policy goals. Accordingly local and central government should establish a framework that ensures that afforestation occurs in such a manner to:

- Create a preference for permanent native forests
- Limits plantation forestry to locations and scales that are compatible with sound environmental management and does not result in further loss of biodiversity

# Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

Forest & Bird has previously provided a briefing to officials on how to effectively control browsing pests to protect carbon stocks and restore native forests. The recommendations in the briefing should be incorporated into the Emissions Reduction Plan.

Key actions include:

- Reducing possum, feral deer, goats (including tahr and chamois), wallabies and pigs on all Department of Conservation, Defence and State-Owned Enterprise land managed land to lowest practicable numbers.
- Maintaining all existing deer free areas in places like Coromandel and Northland.
- Reducing feral browsing mammals on land under Land Information New Zealand control to comply with the Land Act.
- Eradicating wallabies from Aotearoa New Zealand entirely.
- Controlling tahr to a level that complies with the Himalayan Tahr Control Plan 1993 and the National Parks Act.

# Improving browsing pest control

# BRIEFING TO AGENCIES WITH PEST CONTROL

# RESPONSIBILITIES



(c) Photo Rod Morris, Nature Photography

September 2021

# Contact


## **Improving Pest Control**

## Summary

Many of Aotearoa New Zealand's native ecosystems are in crisis and have become weak carbon sinks or are actually *emitting* carbon. Feral browsing animals (deer, possums, wallabies, goats, pigs, chamois and tahr) are eating their way through native forests, shrubland, and tussock-lands, pushing them towards collapse. This is destroying the natural ability of native ecosystems to store carbon. Urgent, ambitious, and co-ordinated control of feral browsing animals is required, to avoid irreversible loss of native ecosystems and to restore the ability of native ecosystems to permanently hold as much carbon as possible. This action would support the Climate Change Commission's recommendation to manage native forests as long-term carbon sinks and by managing pests in an integrated way, to ensure newly planted forests are successfully established and all native forests are maintained long term.

## Recommendations

Forest & Bird asks that you:

**Note** that the following agencies have regulatory and/or pest control responsibilities: Department of Conservation/Te Papa Atawhai (DOC), Land Information New Zealand/ Toitū Te Whenua (LINZ), Ministry for Primary Industries/Manatū Ahu Matua (MPI), Ministry for the Environment/Manatū Mō Te Taiao (MfE), and the Ministry of Defence/Manatū Kaupapa Waonga (MoD).

**Note** that Treasury/Te Tai Ōhanga has oversight of state-owned enterprises that have pest control responsibilities.

Adopt the following targets for coordinated animal pest control across all land under central government public control:

- Increase baseline landscape scale aerial 1080 control on public conservation land annually by 100,000 hectares
- Eradicate wallabies from Aotearoa New Zealand by 2025
- Reduce feral deer, chamois and pigs to the lowest possible levels by 2030 to allow native ecosystems to store the maximum amount of carbon and protect native biodiversity
- Maintain existing deer-free areas and support eradication of deer in areas where there are low numbers and/or have recently arrived or been introduced
- Eradicate feral goats from Aotearoa New Zealand by 2030
- Reduce tahr to comply with the 1993 Himalayan Tahr Control Plan within three years

- Increase use of drones in aerial 1080 pest control for smaller areas with appropriate enabling legislation/rules
- Carry out further research into new technologies for feral browsing animal control

**Agree** to develop a parallel programme of support for hapū, iwi, private landowners, regional and local government to deliver pest control programmes on land for which they are responsible.

Adopt the following agency-specific goals

| Agency               | Recommendations   |  |  |  |
|----------------------|---|--|--|--|
| Department of        | Increase baseline landscape scale aerial 1080 annually by 100,000 hectare   |  |  |  |
| Conservation         | (including integrating the use of drones in smaller areas)                  |  |  |  |
|                      | Eradicate feral browsing animals where necessary and practicable. Control   |  |  |  |
|                      | feral browsing pest animals to ensure full ecosystem structure and          |  |  |  |
|                      | function and to comply with legislation by 2030.                            |  |  |  |
|                      | Control tahr to comply with the 1993 Himalayan Tahr Control Plan within     |  |  |  |
|                      | three years   |  |  |  |
|                      | Ensure management of public conservation land under feral browsing          |  |  |  |
|                      | animal control contributes to national greenhouse gas emissions             |  |  |  |
|                      | reductions  |  |  |  |
| Land Information     | Ensure feral browser control is carried out on all LINZ administered land   |  |  |  |
| New Zealand          | including riverbeds by 2030   |  |  |  |
|                      | Reduce all feral browsing animals on Crown pastoral land to comply with     |  |  |  |
|                      | the Land Act  |  |  |  |
|                      | Ensure LINZ strategic direction and regulations include feral browser       |  |  |  |
|                      | control and Crown pastoral land management objectives contribute to         |  |  |  |
|                      | national emissions reductions   |  |  |  |
| Ministry for Primary | Eradicate wallabies from Aotearoa New Zealand by 2025                       |  |  |  |
| Industries           | Ensure feral browsing animals are recognised as unwanted organisms,         |  |  |  |
|                      | pests or as pest agents under the Biosecurity Act 1993                      |  |  |  |
|                      | Take the lead on feral browsing animal control on all land as a nature-     |  |  |  |
|                      | based solution in the Emissions Reduction Plan                              |  |  |  |
| Ministry for the     | Incorporate the animal pest control recommendations in this briefing into   |  |  |  |
| Environment          | the Emissions Reduction Plan  |  |  |  |
|                      | Incorporate the pest control recommendations in this briefing through the   |  |  |  |
|                      | draft NPS-IB (National Policy Statement for Indigenous Biodiversity) and    |  |  |  |
|                      | proposed complementary measures   |  |  |  |
|                      |   |  |  |  |
|                      | Develop a programme to enable the use of drones for aerial 1080 pest        |  |  |  |
|                      | control in smaller areas of public and private land, including a review of  |  |  |  |
|                      | relevant regulations and simplification of permitting processes             |  |  |  |
| Ministry of Defence  | Eradicate feral browsing animals where necessary and practicable. Control   |  |  |  |
|                      | feral browsing animals to a level that ensures full ecosystem structure and |  |  |  |
|                      | function by 2030  |  |  |  |
|                      | Ensure all Ministry of Defence land management complies with the Wild       |  |  |  |
|                      | Animal Control Act 1977   |  |  |  |
|                      | Ensure management of Ministry of Defence land under feral browsing          |  |  |  |
|                      | animal control contributes to national emissions reductions                 |  |  |  |

| Treasury/State    | Review the performance of state-owned enterprises to ensure they           |
|-------------------|--|
| Owned Enterprises | effectively control and eradicate feral browsing animals on land they      |
|                   | manage   |
|                   | Ensure land managed by state-owned enterprises is contributing to          |
|                   | achieving national emissions reductions via effective browser pest control |

## Background

Aotearoa New Zealand's indigenous biodiversity is unique to these islands, has evolved in the absence of introduced browsing mammals and it is in crisis. More than 4000 native species of plants and wildlife are at risk of extinction.

Introduced feral animals including predators (rats, hedgehogs, mustelids, and cats) and browsers (deer, possums, wallabies, goats, pigs, chamois and tahr) have not only had a devastating impact on native fauna but also on their habitat. Introduced mammals have invaded and degraded native ecosystems in nearly every corner of the country. The combined impacts of introduced browsers consuming seedlings, leaf litter, leaves, buds, bark, and branches and killing trees:

- releases carbon as trees die
- releases methane from the browsing animals
- means a lot of the next generation of native habitats are being eaten instead of growing to maturity and becoming future carbon sinks
- has reduced habitat resilience during extreme climate events.

Advances have been made, particularly in landscape scale predator control (Predator Free 2050, Zero Invasive Predators), however, to allow recovery from widespread collapse of native ecosystems, existing predator control needs to be significantly scaled up and similar landscape scale approaches need to be applied to control introduced feral browsing animals. This will enable native habitat resilience during extreme events and natural ecosystems to store maximum carbon.

## Animal pest control delivers significant benefits for nature

Pest control of introduced feral animals has prevented the total loss of crucial remnant populations of native birds and other native species. Where control occurs, it delivers results. In parts of Aotearoa New Zealand, notably some offshore islands, pest control and/or eradication has allowed natural ecosystems to restore themselves and thrive. Healthy natural ecosystems are much more resilient, by absorbing shocks of weather extremes that can harm native species and human communities, in a rapidly changing climate. Healthy ecosystems are vital to turning the tide on indigenous biodiversity loss and for a climate-safe future.

Feral browsing animals should be controlled to a level that protects the full ecosystem and its natural structure and function. This means carrying out pest control to a level that ensures that the preferred food species of animal pests are healthy and thriving, that no native species is at risk of local extinction from animal pests, and that wider ecosystem functioning such as carbon storage and water and soil conservation is not compromised.

## Feral browsing animal control reduces emissions and increases carbon storage

New Zealand's natural ecosystems store many billions of tonnes of carbon, but they are also vulnerable to switching to releasing carbon – and in some cases already are - if their degradation by introduced browsing animals continues.

The sheer size of native ecosystems means that even very small changes to their health can have a massive impact on the country's greenhouse gas emissions profile. All New Zealand's natural land ecosystems are under stress from feral introduced browsing animals. These animals are responsible for an estimated direct biomass consumption and methane production of between 2.3 and 4.0 Mt CO<sub>2</sub>e per annum alone.

Added to this is the release of carbon as ecosystems collapse. Over three million tonnes of carbon released into the atmosphere has been recorded annually in the most common type of native forest alone, the kamahi-podocarp forests. This is likely to be the result of introduced herbivores killing old trees. But by also eating seedlings and killing young trees, these animals also consume future generations of forest, the future carbon stores.

The ability of ecosystems to absorb and store carbon can resume if the browsing pressure is removed. The sooner action is taken to drastically reduce the number of introduced browsers, the sooner recovering native ecosystems can help New Zealand tackle climate change.

Nearly 15% of New Zealand's 2018 net greenhouse gas emissions per year - 8.4 million tonnes of CO2 - could be locked into native ecosystem carbon sinks if we controlled feral browsing animals to the lowest possible levels.

## The Climate Commission and Introduced Browser Control

The Climate Change Commission has proposed an evidence-based shift in New Zealand's approach to long term carbon storage away from using exotic plantations in favour of native ecosystems as permanent carbon stores.

To achieve this, the Climate Change Commission is proposing that New Zealand:

- Adopt a comprehensive national programme to incentivise natural reversion and planting of new native forests
- Reduce reliance on forestry removals (pines as carbon sink)
- Manage pests in an integrated way to ensure forests are established and *all* forests are maintained long term
- Protect and increase carbon stocks of pre-1990 native forests with fire and pest control

This proposed programme of action will require a substantial increase in introduced browser control across all native forests (and other native ecosystems that store carbon) including land that is reverting to natural ecosystems.

#### The Government's Emissions Reduction Plan

The Government has signaled that nature-based solutions to climate change are a key part in the Government's approach to developing an Emissions Reduction Plan under the Zero Carbon Act. This must include significantly increased introduced browser pest control.

## Introduced browser control delivers direct benefits to the economy

The foundation of Aotearoa New Zealand's economy is a stable and healthy environment. The proposed introduced browser control outlined delivers direct benefits to primary industries and the economy, and healthy, functioning natural ecosystems by:

- preventing erosion and sediment runoff into waterways and the marine environment
- buffering drought impacts and help control flooding
- breaking the fall of rain, absorbing water, and slowing the release of water into waterways
- controlling diseases like bovine tuberculosis
- preventing farm invasion and their economic consequences by feral browsing animals
- cutting methane from feral browsers
- significantly increasing carbon storage

Impressive effort is going into replanting native vegetation to restore native ecosystems. However, the full benefit of native revegetation relies on adequate feral browsing animal control to protect that investment from the outset and over time. There is no point replanting if these plants then get eaten by possums, goats, or deer.

Significant scientific research effort is being applied to landscape scaled programmes like Predator Free 2050 (PF 2050), Zero Invasive Predators (ZIP), Tiakina Ngā Manu (Battle for our Birds), by targeting rats, stoats, and possums. The knowledge gained is likely to deliver intellectual property that could inform new methods of introduced browser control, contribute to Aotearoa New Zealand's export earnings, or be shared to benefit the conservation efforts of other countries, including Pacific partners. At present, with the exception of possums, this work is focussed largely on predators. A similar landscape scale approach to control introduced feral browsing animals is also required, to ensure healthy functioning natural ecosystems and to maximise natural carbon sinks.

## Commitments – International and National

Without integrated pest control that targets all invasive mammals – which includes both predators and browsing species – neither indigenous biodiversity nor the climate will benefit to the fullest extent. Doing so helps fulfil our commitments to Paris Agreement on Climate Change and the Convention on Biological Diversity – expressed via *Te Mana o te Taiao, Aotearoa New Zealand Biodiversity Strategy.* 

## Te Mana o te Taiao, Aotearoa New Zealand Biodiversity Strategy

Te Mana o te Taiao, Aotearoa New Zealand Biodiversity Strategy is the guiding strategy for biodiversity recovery and protection in Aotearoa New Zealand. It provides a pathway of actions across all sectors and government to achieve the vision of "te mauri hikahika o te taiao" - "the life force of nature is vibrant and vigorous."

In doing so, it recognises that a suite of predators and browsers have been introduced to Aotearoa New Zealand that threaten many indigenous species. These introduced species include possums, stoats, ferrets, weasels, rats, mice, cats, hedgehogs, pigs, rabbits, deer, goats, invasive introduced fish, and wallabies; that biosecurity incursions are a constant threat likely exacerbated by climate change; and the actions we take to respond to and mitigate the effects of climate change may also have impacts on biodiversity.

The Minister of Conservation has signalled that implementing Te Mana o te Taiao, Aotearoa New Zealand Biodiversity Strategy is a priority.

| Te Mana o te Taiao Five Key Outcomes |                   |                    |                  |               |
|--------------------------------------|-------------------|--------------------|------------------|---------------|
| Ecosystems from                      | Indigenous        | People's lives are | Treaty partners, | Prosperity is |
| mountain tops to                     | species and their | enriched through   | whānau, hapū     | intrinsically |
| ocean depths are                     | habitats across   | their connection   | and iwi are      | linked with a |
| thriving                             | Aotearoa New      | with nature        | exercising their | thriving      |
|                                      | Zealand and       |                    | full role as     | biodiversity. |
|                                      |                   |                    |                  |               |

Te Mana o te Taiao, Aotearoa New Zealand Biodiversity Strategy has five key outcomes.

| beyond are | rangatira and |  |
|------------|---------------|--|
| thriving   | kaitiaki      |  |
|            |               |  |

To achieve these key outcomes, the strategy focuses on three pou or pillars, each with their own relevant objectives:

| Te Mana o te Taiao Three Pou or Pillars |                   |                          |  |
|---|-------------------|--------------------------|--|
| Tūāpapa                                 | Whakahau          | Tiaki me te whakahaumanu |  |
| Getting the system right                | Empowering action | Protecting and restoring |  |

Tiaki me te whakahaumanu has objectives that are relevant to feral browsing animal control and the interface of climate change, biodiversity protection and restoration. The table below sets out the relevant Tiaki me te whakahaumanu objectives; short-, medium- and long-term goals; and Forest & Bird's interpretation of the goal and recommended agency response.

| Te Mana o te   | Te Mana o te Taiao: Tiaki me te whakahaumanu - Protecting and Restoring |   |   |  |
|--|---|---|---|--|
| Objective  | Year Goal Forest & Bird's recomm  |   | Forest & Bird's recommended   |  |
| -  |   |   | agency response   |  |
| 11. Biological<br>threats and<br>pressures are<br>reduced<br>through<br>management | 2025  | <b>11.1.1</b> The impacts of introduced browsers,<br>including valued introduced species (pigs,<br>deer, tahr and chamois), on indigenous<br>biodiversity have been quantified, and plans<br>for their active management have been<br>developed with Treaty partners, whānau,<br>hapū, iwi, Māori organisations and<br>stakeholders | Agencies with land management<br>responsibilities<br>(DOC/LINZ/MDF/Treasury SOE, Local and<br>Regional Government) to quantify<br>impact of introduced browsers, develop,<br>and implement joint plans for active<br>management to reduce browsing<br>animals to numbers as low as possible<br>Agencies with policy responsibilities<br>(MFE/MPI/LINZ/Treasury) ensure policy<br>and regulation directs effective browser<br>control across agencies and ensure there<br>is adequate resourcing to implement and<br>monitor policy and management actions |  |
|  | 2030  | <b>11.1.2</b> Introduced browsers, including valued introduced species, are actively managed to reduce pressures on indigenous biodiversity and maintain cultural and recreational value  | Actions and policies are implemented<br>and monitored by all agencies and there<br>is adequate resourcing to ensure<br>objectives and targets are achieved  |  |
|  | 2050  | <b>11.1.3</b> Introduced browsers, including valued introduced species, have been removed from high priority biodiversity areas and threatened ecosystems and are under ongoing management elsewhere to maintain functioning ecosystems and cultural and recreational values  | Actions and policies are implemented,<br>resourced, and monitored by all agencies<br>and adaptive management occurs, where<br>necessary to ensure long term goals are<br>achieved, including the removal of<br>introduced browsers from high priority<br>biodiversity areas and threatened<br>ecosystems  |  |
| 13.<br>Biodiversity<br>provides<br>nature-based<br>solutions to<br>climate change  | 2025  | <b>13.1.1</b> The potential for carbon storage from<br>the restoration of indigenous ecosystems,<br>including wetlands, forests, and coastal and<br>marine ecosystems (blue carbon), to<br>contribute to our net emissions targets is<br>understood   | Agencies with land management<br>responsibilities<br>(DOC/LINZ/MDF/Treasury SOE) to<br>quantify the potential for carbon storage<br>from natural ecosystems on land that<br>they administer and understand how it   |  |

| and is resilient |      | 13.2.1 The potential for indigenous nature-          | contributes to achieving long term        |
|------------------|------|--|---|
| to its effects   |      | based solutions is understood and being              | emissions targets                         |
|                  |      | incorporated into planning                           | Agencies with policy and regulatory       |
|                  |      | <b>13.3.1</b> Potential impacts from climate change  | responsibilities                          |
|                  |      | have been integrated into ecosystem and              | (DOC/MFE/MPI/LINZ/Treasury) ensure        |
|                  |      | species management plans and strategies,             | policy and regulation directs agencies to |
|                  |      | and a research and rangahau strategy has             | promote and utilise carbon accounting     |
|                  |      | been developed to increase knowledge and             | from natural ecosystem to contribute to   |
|                  |      | understanding of climate change effects              | net emissions targets                     |
|                  | 2030 | <b>13.1.2</b> Carbon storage from the restoration of | Agencies with land management             |
|                  |      | indigenous ecosystems, including wetlands,           | responsibilities are actively reducing    |
|                  |      | forests, and coastal and marine ecosystems           | browsing pest animals and measuring       |
|                  |      | (blue carbon), contributes to our net                | the contribution of natural ecosystems    |
|                  |      | emissions targets                                    | on land they administer to achieving net  |
| ĺ                |      | <b>13.2.2</b> The restoration of indigenous          | emission targets.                         |
|                  |      | ecosystems is increasingly being used to             | Agencies with policy and regulatory       |
|                  |      | improve our resilience to the effects of             | responsibilities are implementing policy  |
|                  |      | climate change, including coastal protection         | that directs control of browsing animals  |
|                  |      | against rising sea levels                            | to restore native ecosystems, reduces     |
|                  |      | <b>13.3.2</b> Risks to biodiversity from climate     | risk and improves resilience to the       |
|                  |      | change, including cascading effects (e.g.,           | effects of climate change and are         |
|                  |      | increases in introduced invasive species.            | reporting on contribution to achieving    |
|                  |      | water abstraction, fire risk, sedimentation)         | emissions targets; and holding those      |
|                  |      | have been identified and assessed, and               | accountable who are not contributing.     |
|                  |      | indigenous ecosystems, habitats and species          |   |
|                  |      | are being managed to build resilience where          |   |
|                  |      | possible   |   |
|                  | 2050 | <b>13.1.3</b> Carbon storage from the restoration of | Agencies with land management             |
|                  |      | indigenous ecosystems, including wetlands.           | responsibilities are maximising the       |
|                  |      | forests, and coastal and marine ecosystems           | amount of carbon stored in natural        |
|                  |      | (blue carbon), is a key contributor to               | ecosystems on land they administer and    |
|                  |      | achieving net zero emissions for Aotearoa            | contributing to achieving net zero        |
|                  |      | New Zealand  | emissions                                 |
|                  |      | 13 2 3 The restoration of indigenous                 | Agencies with policy and regulatory       |
|                  |      | ecosystems is mitigating the effects of              | responsibilities are monitoring and       |
|                  |      | climate change and natural hazards (e.g.             | measuring contributions to achieving net  |
|                  |      | flooding)  | zero emissions and demanding              |
|                  |      | 13 3 3 Adaptive management is addressing             | accountability from those who are not     |
|                  |      | the impact of climate change on biodiversity         | contributing                              |
|                  |      | including cascading effects and is building          |   |
|                  |      | resilience to future ricks                           |   |
| 1                | 1    | resilience to future fisks                           |   |

#### Integrated approach is needed

The protecting and restoring objectives of 'Tiaki me te whakahaumanu' must be supported by ones in Tūāpapa, that is, getting the legislative system right and ensuring adequate resourcing for implementation, compliance, monitoring and enforcement; and Whakahau, which means ensuring robust and transparent collaboration, co-design, and genuine partnership. Examples of the legislative and regulatory framework required to support getting the system right are the roll out of the National Policy Statement for Indigenous Biodiversity; RMA reform, and the Crown Pastoral Land Reform Bill, as well as the Emissions Reduction Plan – a requirement under the Zero Carbon Act.

Achievement of Te Mana o te Taiao high-level outcomes, objectives and time bound goals will require government agencies and the private sector to co-operate to reduce introduced browsers as

low as possible and eradicate where specified; and to prioritise biodiversity outcomes and the climate response. Pests do not respect land boundaries, so pest control needs to involve the full range of land managers.

Management that delivers properly functioning ecosystems, including for the critical ecosystem function of carbon storage, will require achieving very low levels of browsing pests.

It is likely that, to secure the full climate change benefits of introduced browser control, efforts may need to go further than for biodiversity protection alone. Considering the recent IPCC (Intergovernmental Panel on Climate Change) report into achieving no more than 1.5 degrees warming, and the advice of the Climate Change Commission, carbon storage in natural ecosystems will need to deliver more than the carbon neutrality anticipated by Te Mana o te Taiao and instead contribute to New Zealand becoming a net carbon store over time; national removals of carbon will need to exceed emissions.

### Labour manifesto

In the 2020 Manifesto, Labour states:

"We will ensure responsibility for sustainable use and restoration of our natural resources is shared by all, and in doing so protect our environment for future New Zealanders. We are driven, not only by what we have, but by whether our actions are going to leave our children's and grandchildren's generations with an even better country than we have today."

On the natural environment, Labour states:

- Our natural environment is critical to our wellbeing, tourism, and national identity.
- Labour will protect, preserve, and restore our natural heritage and biodiversity, and promote the recovery of threatened species.
- Labour will continue to roll out Jobs for Nature that invests in community projects to address long-term environmental issues.
- Labour will continue its work towards New Zealand's goal of planting one billion trees by 2028.

And on climate change:

- Climate change is a crisis, and Labour has put in place a comprehensive programme to tackle it across energy, transport, agriculture, forestry, waste, and our construction sector.
- Labour will increase investment in world leading research that helps us reduce emissions.

 Labour will work with local councils, unions, industry, iwi and Māori organisations to ensure a just transition to a zero carbon and climate- resilient economy and society, which also optimises economic development opportunities.

In 2019, the Labour-led Government passed the Climate Change Response (Zero Carbon) Amendment Act with a target of net zero carbon by 2050 and in 2020 Labour's Wellbeing budget prioritises a just transition to a climate resilient, sustainable, low emissions economy.

To meet this wellbeing priority, ensure a just transition, and meet the 2050 zero-carbon target, policies and actions on climate change and the natural environment require a joined-up approach that recognises and reinforces the importance of a stable and healthy natural environment as the backbone of New Zealand's economy. For example, Labour's goal of planting one billion trees by 2028, and for those trees to thrive, is unlikely to be deliverable unless it is matched with nationwide browser pest control.

## Agency responsibilities

#### Department of Conservation Te Papa Atawhai

The Department of Conservation (DOC) manages approximately 30% of Aotearoa New Zealand's landmass, totalling about eight million hectares. DOC also has responsibility for maritime parks and marine reserves. The land is administered by DOC under the Conservation Act 1987 (CA), National Parks Act 1980 (NPA) or Reserves Act 1977 (RA). Under the CA, DOC has responsibility to advocate for the conservation of natural and historic resources generally. Conservation means to preserve and protect. DOC also has responsibility for controlling wild animals under the Wild Animal Control Act 1977 (WACA) on all land. The WACA defines wild animals as deer, tahr, goats and chamois.

DOC should:

- Increase baseline landscape scale control with helicopter aerial 1080 annually by 100,000 hectares
- Eradicate feral wallabies and goats, reduce wild deer, pigs, possums and chamois to the lowest possible numbers
- Control tahr to comply with the 1993 Himalayan Tahr Control Plan by 2025
- Ensure concerted action against the damaging effects of wild pest animals on vegetation, soils, waters, and wildlife

#### Land Information New Zealand Toitū Te Whenua

Land Information New Zealand (LINZ) manages around 2 million hectares of land and as a land manager is second only to the Department of Conservation. This land is either leased to private lessees or directly managed by LINZ includes lands with native forests, many South Island braided rivers, and rivers such as the Waikato and Rangitikei in the North Island.

LINZ land contains some of the most threatened species and habitats in Aotearoa. LINZ needs to ensure that it is carrying out a sufficient level of pest control on land it directly controls, and that lessees are carrying out pest control on land they lease in line with to national efforts to control pests. The Land Act 1948 s 99b requires Crown pastoral lease land be kept free from wild animals, rabbits, and other vermin, and to generally comply with the provisions of the Biosecurity Act 1993. Wild animals in the Land Act are the same as those defined in the WACA i.e., deer, tahr, goats and chamois.

LINZ should:

- Ensure browser control is carried out on all LINZ administered land including riverbeds by 2030
- Reduce all feral browsing mammals on Crown pastoral land to comply with the Land Act 1948
- Ensure its strategic direction and regulations consider the range of purposes for which the land can be held, including for Te Mana o te Taiao objectives and goals.

#### Ministry for Primary Industries Manatū Ahu Matua

The Ministry for Primary Industries administers the Biosecurity Act 1993 and has overall responsibility for biosecurity including continued possum control to supress diseases like Tb and eradicating wallabies from Aotearoa New Zealand in partnership with Regional Councils.

Ministry for Primary Industries should:

- Eradicate wallabies from Aotearoa New Zealand by 2025
- Ensure feral browsing mammals are recognised as unwanted organisms, pests or as pest agents under the Biosecurity Act
- Lead on animal pest control as a nature-based solution in the Emissions Reduction Plan.

#### Ministry for the Environment Manatū Mō Te Taiao

The Ministry for the Environment is focused on developing and providing a national environmental management system, including laws, regulations, national policy statements and national environmental standards, including for pest control toxins and how they are used. Relevant to this briefing, MFE is responsible for the National Policy Statement for Indigenous Biodiversity (NPS-IB)

which will be the key statutory tool for ensuring Te Mana o te Taiao objectives and goals for indigenous biodiversity are enshrined in law.

A key role of the Ministry is to lead development of the country's Emissions Reduction Plan under the Climate Change Response Act.

MFE should:

- Incorporate the pest control recommendations in this briefing through the implementation of the draft NPS-IB and any proposed complementary measures.
- Incorporate the pest control recommendations in this briefing into the Emissions Reduction Plan.

### Ministry of Defence Manatū Kaupapa Waonga

New Zealand's combined defence force is a significant land holder. The Ministry of Defence needs to ensure that as a landholder the Defence Force is adequately protecting land that it manages from browsing pest animals and is making the appropriate contribution to nationwide efforts to control pests.

Ministry of Defence should:

- Eradicate feral wallabies and goats, reduce wild deer, pigs, possums and chamois to the lowest possible numbers
- Ensure all Ministry of Defence land management is in compliance with the Wild Animal Control Act 1977

#### Treasury Te Tai Ōhanga

Treasury exercises oversight over state-owned enterprises. Some of these enterprises, including energy companies, Pāmu and KiwiRail have significant land holdings and have associated pest control obligations. Via the Shareholding Minister, Treasury needs to ensure that these companies are delivering on their pest control obligations and contributing sufficiently to national pest control efforts.

Treasury should:

• Review the performance of state-owned enterprises to ensure they are exercising effective control and eradication of pests on land they manage.

## Pest control targets

#### Introduction

This section outlines key pest control targets that need to be achieved to secure the biodiversity, climate, and economic benefits of pest control. Given that in some cases, agencies are starting from a low base of operations and would need to build capability. Forest & Bird recognises that some annual targets would take up to five years to achieve.

#### Increase baseline aerial 1080 to 1.6 million hectares of public conservation land by 2030

Baseline aerial 1080 control currently covers approximately 8% of public conservation land and averages about 600,000 hectares of land treated per year. Treatment increases to about 1,000,000 hectares during mast years, which bring a significant explosion in pest animals. Increasing baseline landscape scale aerial 1080 treatment by 100,000ha/year for the next ten years means that one million more hectares of public conservation land that needs 1080 treatment, receives it. This target should be reviewed in ten years.

Predator control should be co-ordinated with introduced feral browser control for cost, efficiency and to allow a broader protection and restoration of native habitats. This would also help deliver the maximum improvement in carbon storage and indigenous biodiversity recovery.

Increasing baseline 1080 treatment will:

- help enable priority native ecosystems to thrive
- return the cycle of carbon storage capacity of public conservation land.

#### Eradicate wallabies from Aotearoa New Zealand by 2025 to:

- enable native ecosystems to store the maximum amount of carbon
- enable native biodiversity including threatened and culturally important taonga species, to recover and thrive
- stabilise slips and erosion caused by wallabies and downstream effects on waterways and coastal marine areas
- prevent economic damage by wallabies to agriculture, forestry, horticulture, and new permanent carbon sink plantings e.g., billion trees

#### Reduce feral deer and chamois to the lowest possible levels by 2030 to:

- enable native ecosystems to store the maximum amount of carbon
- enable native biodiversity, including threatened and culturally important taonga species, to recover and thrive

- stabilise erosion prone land and prevent slips and erosion caused by deer and chamois with consequential downstream effects on water ways and coastal marine areas
- prevent economic damage by deer to agriculture, forestry, and horticulture, and to new permanent carbon sink plantings e.g., billion trees and the cost of landowners of deerfencing protected areas

#### Eradicate feral goats from Aotearoa New Zealand by 2030 to:

- enable native ecosystems to store the maximum amount of carbon
- enable native biodiversity including threatened and culturally important taonga species, to recover and thrive
- stabilise slips and erosion caused by goats and downstream effects on waterways and coastal marine areas
- prevent economic damage by goats to agriculture, forestry and horticulture and new permanent carbon sink plantings e.g., billion trees - and cost of landowners of goat eradication and damage

#### Reduce tahr to comply with the 1993 Himalayan Tahr Control Plan within three years

The 1993 Himalayan Tahr Control Plan (HTCP) is a statutory plan implemented by the DOC. Official tahr control to reduce the number of tahr re-commenced in 2018 and its continued resourcing is required to ensure native alpine habitats recover and thrive, and the HTCP limits are met and maintained efficiently. LINZ also need to co-ordinate tahr control on Crown pastoral land, to complement the HTCP and to comply with the Land Act, and to reduce reinvasion on to neighbouring public conservation land.

#### Reduce feral pigs to the lowest possible levels by 2030 to:

- enable native ecosystems to store the maximum amount of carbon
- enable native biodiversity including threatened and culturally important taonga species, to recover and thrive
- stabilise erosion prone land and prevent slips and erosion caused by deer and chamois with consequential downstream effects on water ways and coastal marine areas
- prevent economic damage by pigs to agriculture, forestry, horticulture, and new permanent carbon sink plantings e.g., billion trees
- reduce kauri dieback spread

#### Deploying drones for 1080 pest control

Many areas of public and privately managed native habitats miss out on aerial 1080 pest control because of costs associated with helicopter use at smaller scales (e.g., less than 2,000 hectares) and onerous permit applications.

Aerial scattering of 1080 baits ensures the best coverage from the treetops to the forest floor. This decade will see the ability to use drones for smaller aerial 1080 applications that will enable smaller areas of private and public land to assist in biodiversity recovery and carbon sequestration. These smaller areas are often arks of remaining pockets of native biodiversity from which carbon store corridors can grow, are numerous, widespread, and added together make up a substantial area.

A simple permitting application process is needed specifically for drone 1080 work on public and private land for:

- ease of single and multiple small operations
- clear and swift processing to enable rapid response in a drought (where trees are already severely under stress from browsing) or mast events

#### **Essential Service Status**

To ensure continuity and effectiveness of pest animal control, and to save native biodiversity and protect carbon sinks under Level 3 and 4 pandemic rules, all pest animal control activities need to be granted 'essential service' status, provided they can be carried out with effective social distancing.

#### Research

 Ensure there is adequate funding for research and development of new technologies for feral browsing animal control

#### Attachment Protecting our Natural Ecosystems' Carbon Sinks

<u>Protecting our Natural Ecosystems' Carbon Sinks</u> is a report commissioned by Forest & Bird and coauthored by Kevin Hackwell, former Senior Conservation Advisor that outlines the benefits for New Zealand's climate change response from controlling introduced browsing pest animals. The report estimates that the equivalent of nearly 15% of New Zealand's 2018 net greenhouse gas emissions per year — 8.4 million tonnes of CO2 — could be locked into native ecosystem carbon sinks if feral browsing animals are controlled to the lowest possible levels. The report recommends co-ordinated control of introduced browsing species will be necessary to achieve a win-win outcomes for both native species protection and to increase the carbon sinking abilities of native forest, shrubland and tussock-land. Long term and comprehensive research will give a clearer picture of greenhouse gas emissions and carbon sinks, to inform management decisions. New technology for browser control is also a key part of research.

Protecting Our Natural Ecosystems' Carbon Sinks' reveals many native habitats are in crisis because introduced deer, possums, wallabies, goats, pigs, chamois and tahr, have been eating their way through native forests, shrubland, and tussock-land.

This has destroyed the natural ability of native ecosystems to be the best carbon sinks on land. Consequently, these habitats are now either weak carbon sinks or are bleeding stored carbon.

Acting now to turn around the destruction caused by browsing pests would protect and restore carbon stocks and protect nature, and this action is a vital nature-based solution to help achieve Aotearoa New Zealand's long term emissions reduction target and to address the dual crises of climate and biodiversity loss.

#### For a summary and full report visit:

Climate change and introduced browsers | Forest and Bird

22 November 2021



Ministry for the Environment – Manatū Mō Te Taiao PO Box 10362, Wellington 6143, New Zealand

By email: climateconsultation2021@mfe.govt.nz

## Gas NZ Submission on Te Hau Mārohi ki Anamata – Transitioning to a low-emissions and climate resilient future

#### Tēnā koutou e te rangatira mā o Te Manatū Mō Te Taiao

Gas NZ, representing the LPG Association (LPGA) and the Gas Association of New Zealand (GANZ), is committed to net zero carbon by 2050. Our submission encourages an orderly transition and new opportunities for energy diversity and growth.

With a focus on the issues pertaining to gas and LPG in the transition to a low carbon economy, our primary recommendation is that Government introduce a Renewable Gas Mandate requiring procurement targets and goals for renewable LPG, renewable gas, and hydrogen, through to 2050.

Gas is a fuel in transition and work is well underway to introduce renewable gas and renewable LPG into homes and businesses. The industry has invested in feasibility studies and pilot projects that support the viability of phasing in renewable LPG and gases into existing New Zealand energy networks. With the right policy settings in place, the industry can start to introduce low emissions alternatives by 2025 and scale up significantly by the end of the decade.

There are substantial opportunities for the circular economy in the 'waste' feedstock needed for renewable LPG and gas, while at the same time providing regional prospects for industry, local communities, iwi, and Māori businesses, to be part of a carbon zero future. We are already working with a number of these groups to develop opportunities.

According to the Gas Infrastructure Working Group, gas pipelines supply over 760,000 residential gas consumers (residents not connections). In addition, over 19,000 businesses such as restaurants and hotels use natural gas.

We do not support a ban on new gas connections, which would be detrimental to achieving the Government's renewable energy goals, unnecessarily closing off options for renewable gases like hydrogen. It is essential that pipelines, connections and appliance infrastructure are maintained to support future demand for renewable gas and renewable LPG. Prematurely limiting or closing off these options undermines efforts to develop a renewable gas industry and directly harms energy users in hard to abate sectors that are expected to create significant economic opportunities over the coming years (such as hospitality, horticulture, and food processing).

LPGA and GANZ are committed to working with government, our customers, communities and iwi to ensure an orderly and equitable energy transition. We strongly urge government to involve the gas and LPG industries as it considers the feedback received from the discussion document and the detail of the emissions reduction plan forms.

Our submission is supported by the Bioenergy Association, the Hospitality Association, and the Business New Zealand Energy Council. We are listening we are collaborating and we welcome the opportunity to contribute.

Ngā mihi maioha

Janet Carson Chief Executive The LPG Association and the Gas Association of New Zealand

## Gas NZ Submission on Te Hau Mārohi ki Anamata – Transitioning to a low-emissions and climate resilient future

#### 1. PURPOSE

The purpose of this submission is to provide feedback on the high-level Te Hau Mārohi discussion paper; to reinforce the criticality of gas and LPG as fuels in transition; and to propose specific steps the government can take to ensure an orderly and equitable transition.

A key option available to decarbonise New Zealand's energy system is to use existing gas infrastructure and networks to transport zero carbon gas. The most promising options for decarbonising gas infrastructure are to incorporate biogas and hydrogen into natural gas systems and to incorporate bio-LPG and biomass derived dimethyl ether (rDME) into LPG systems.

Over the past few years, Gas NZ members (representing the LPGA and GANZ) have been advancing commercial and R&D opportunities for these gases. These opportunities are consistent with the Climate Change Commission's guiding principle of keeping options open – New Zealand will need all possible tools, including zero carbon gas, to achieve net zero by 2050.

This submission addresses the work that industry has done to date to achieve these outcomes and our direction of travel on a journey that will take many years. While this submission concludes with proposals in respect of the Carbon Emissions Reduction Plan, we urge government to involve the gas and LPG industry as it considers the feedback received and it forms the detail of the emissions reduction plan and associated regulations.

#### 2. RENEWABLE LPG

Bio-LPG is similar to biogas in terms of its technical readiness and ability to play a role immediately. Many countries in Europe already have sources of bio-LPG in their energy mix and no changes to consumer appliances are required because bio-LPG is chemically identical to conventional LPG.

In Europe the production of bio-LPG mostly comes from bio-refineries, whereas domestic production of bio-LPG in New Zealand can leverage off the development of a domestic biofuels industry (with bio-LPG forming part of the output product mix).

In March this year, the LPGA commissioned Worley to provide a technical view of the pathways to bio-LPG for New Zealand. This report concludes that available pathways could supply around 30% of LPG demand by 2035 – resulting in emissions reductions that are consistent with the Commission's carbon budgets<sup>1</sup>.

Since bio-LPG could also be imported, there are existing supply chains to accept fuels and integrate them alongside domestic production if required. This provides additional assurance that supply can be brought to market as needed.

The estimated supply of LPG in the Worley report is shown in the following LPG Market Projection graph– with the green areas provided via renewable LPG (rLPG) pathways. The emissions reductions achieved are significant, lowering emissions from around 600,000 tCO<sub>2</sub> per year today to 300,000 tCO<sub>2</sub> per year in 2035g.

<sup>1</sup> Worley Report: Pathway to 70 / 100% renewable LPG March 2021



#### LPG market plan – 70% rLPG substitution

Since Worley completed the March 2021 report, industry has focused on identifying the most promising early opportunities for the production of rLPG and rDME.

Renewable LPG is being produced in Europe and increasingly in the USA and other parts of the world as a byproduct of the hydrotreating of vegetable oils for biodiesel. This process is unlikely to be a substantial source of rLPG in New Zealand. Emerging developments and 2nd generation technologies open real opportunities for New Zealand to produce rLPG within the next few years.

Alternatively, there are mature technologies available now for the production of rDME from a variety of feedstocks, including dairy manure and municipal and abattoir waste streams. Pathways via biogas and methanol as well as gasification and syngas to rDME technologies are mature with many technology providers. Production of rDME is gaining significant traction in Europe and the USA. It is the best prospect for making substantial early progress in the decarbonisation of LPG in New Zealand.

The New Zealand LPGA is working closely with the Australian LPG industry and Gas Energy Australia to cooperate on renewable LPG options.

#### 2.1 Using rDME in domestic and commercial gas appliances

There is considerable work being advanced by various jurisdictions on the use of rDME and LPG blends, however current LPG regulations and Appliance safety regulations do not cater for the blending of rDME with LPG.

BSI, a certification body in the UK, is actively working on a testing regime to understand the performance of standard LPG products on a rDME blend and preliminary appliance testing in Japan on a range of appliances has shown normal operation for blends of 20% rDME and higher.

Given the large number of appliances in the market that would need to operate safety and effectively on a rDME blend without modification, testing would need to provide confidence across all existing appliance types.

The LPGA expects to finalise a second report from Worleys which aims to identify the most promising early opportunities for the production of rLPG and rDME by the end of 2021 and will share these findings with government when the report is complete.

There are some regulatory issues to resolve to enable the production of rDME beyond early concept and to make further progress on renewable gas blends. We have been in discussions with the regulator on these matters and understand the GIC is currently exploring, options for regulating renewable LPG, rDME and other renewable gases (such as hydrogen) in the future.

## 3. RENEWABLE GAS (BIOGAS)

Together with Fonterra, Beca and EECA, Gas Association New Zealand member First Gas released a study into the potential for biogas to displace natural gas in New Zealand and to help to better understand the realistic potential for biogas in New Zealand, given the availability of organic waste feedstocks. The key findings of the work completed by Beca were that:

- 1. The technology is mature and consists of two main components:
  - Anaerobic digestion to rapidly decompose organic waste to release biogas and produce digestate
  - Processing biogas to biomethane by removing CO<sub>2</sub> and any impurities from the raw biogas.

Biogas already displaces natural gas around the world, particularly in Europe. Denmark has already scaled up its biogas industry and now has 20% of gas supply coming in the form of biogas.

New Zealand has its first utility scale food waste anaerobic digestion plant under construction in Reporoa that will produce biogas and renewable fertiliser from Auckland's municipal food waste, rather than disposing of this waste at landfills. Developed by Ecogas, the Reporoa project is a great example of the circular economy in action.

There are two reasons that biogas projects to displace natural gas have not been economic in New Zealand, both of which are changing:

- The low cost of other waste disposal options. The producers of organic wastes (such as wastewater, dairy process waste, meat process waste, and dairy effluent) have historically been able to dispose waste through lower cost alternatives than anaerobic digestion.
- The low price of natural gas and unknown price premium for renewable gas. New Zealand has historically enjoyed relatively low-priced natural gas. Wholesale gas costs over the past decade have averaged \$7/GJ (in real 2019 prices). However, as the Climate Change Commission notes, natural gas prices will continue to rise in future years as carbon prices rise.

These market changes are having a real impact on the appetite for investment in biogas. In addition to the Reporoa project described earlier, we are aware of several other projects that are at pre-feasibility stages that would significantly increase New Zealand's use of biogas and reduce emissions from the use of natural gas.

# 4. HYDROGEN PROVIDES A VALUABLE OPTION FOR NEW ZEALAND'S LONG-TERM ENERGY TRANSITION

The energy system advantages and international progress on hydrogen mean that of all the future energy sector developments, hydrogen is perhaps the most exciting. This was recently reinforced by Lord Deben (Head of the UK Climate Change Committee) who expressed the view that New Zealand is ideally placed to lead the world on hydrogen deployment.

Gas networks are a critical enabler of the hydrogen economy. Without pipeline infrastructure, hydrogen would need to be transported at much higher cost and would be unable to economically reach the majority of customers.

There is immense international interest in realising the potential of hydrogen in energy systems. Around 30 countries have a national hydrogen strategy in place and \$70 billion of funding has been committed globally to hydrogen projects. This international interest is expected to bring the costs of critical hydrogen equipment (such as electrolysers) down, while also leading to improvements in the hydrogen production process (for example by improving conversion efficiencies from electricity and water to hydrogen).

While biogas technologies and supply sources are available today, hydrogen is likely to take longer to make an impact on New Zealand's overall emissions profile. However, the real advantages that hydrogen brings for New Zealand are that it is scalable (to the full extent of New Zealand's renewable resources) and that it holds the potential to simultaneously solve several intractable problems facing energy system decarbonisation. The likely sources of hydrogen demand in New Zealand are shown in the figure below.



## Sources of hydrogen demand in New Zealand

Significant work has also been completed exploring the future role that gas pipelines play in enabling the hydrogen economy in New Zealand<sup>2</sup>. The key findings from the hydrogen pipeline study include:

- New Zealand's gas transmission and distribution networks are well-configured to deliver future hydrogen supply to meet demand. Network capacities are sufficient to transport hydrogen efficiently, notwithstanding hydrogen's lower energy value when compared with natural gas.
- The pipeline expenditure required to accommodate hydrogen is consistent with normal levels of renewal and replacement costs. Gas distribution networks are predominantly comprised of polyethylene (PE) pipes, which is the preferred material for transporting hydrogen (i.e., new dedicated hydrogen pipelines use PE pipes). While some distribution system equipment (such as valves) will need to be replaced, current pipeline tariffs should be sufficient to fund this expenditure. Required expenditure on the transmission system will depend on the findings of research currently underway into hydrogen embrittlement of high-grade steels (which make up around one third of the transmission system in New Zealand).

<sup>2</sup> Firstgas Hydrogen Pipeline Study 2020 (Summary Report)

## 5. SETTING A RENEWABLE GAS MANDATE

Consistent with the government's sustainable transport biofuels mandate proposal, we suggest that the best option to reduce emissions from natural gas and LPG is to set a renewable gas mandate (including renewable gas, renewable LPG and hydrogen).

Adopting a similar mandate for gas as has been proposed for transport fuels aligns with government's response to a similar set of circumstances to address hard to abate emissions, its desire to repurpose existing infrastructure, and challenging economics of low emissions alternatives even with a relatively high carbon price.

At its most basic the mandate could focus on home and businesses heating, water and cooking, and would see escalating quantities required from 2025 to 2050. However, a more ambitious mandate could also include other gas users, for example process heat and possibly even gas for electricity generation.

The following table outlines the advantages and disadvantages of a renewable gas mandate applied to buildings vs setting a date to ban new gas connections.

| Set a renewable gas and LPG mandate for a<br>proportion of gas and LPG used in building<br>heating, cooking and hot water to come from<br>renewable (non-fossil fuel) sources. |   | Set a date by when no new gas connections are permitted. |  |
|--|---|--|--|
| $\bigcirc$   | High certainty of CO <sub>2</sub> reductions  | $\bigcirc$   | High certainty of CO <sub>2</sub> reductions   |
| $\otimes$  | Risks new building systems having<br>to convert to another fuel if<br>renewable gas is not available          | $\bigcirc$   | Avoids risk of new buildings<br>installing heating systems that must<br>be replaced within useful life     |
| $\bigcirc$   | Preserves options to decarbonise<br>heat using gas appliances (biogas,<br>hydrogen, bioLPG)                   | $(\times)$   | Closes off options to reduce<br>emissions using gas appliances<br>(biogas, hydrogen, bioLPG)               |
| $\bigcirc$   | Provides diversity in energy distribution channels  | $\otimes$  | Decreases energy system resilience<br>(puts all eggs in one electric basket)                               |
| $\otimes$  | Risks increasing delivered price of<br>gas (only) by requiring supply of less<br>economic alternatives        | $\otimes$  | Risks increasing delivered price of gas and electricity due to network economics                           |
| $\bigcirc$   | Preserves value in existing networks and household plumbing systems   | $\otimes$  | Strands existing assets in gas<br>networks and household plumbing<br>systems that can be repurposed        |
| $\bigcirc$   | Preserves public commitment<br>to decarbonisation by enabling<br>consumer choice of appliances                | $\bigotimes$   | Risks losing public commitment<br>due to the absence of comparable<br>substitutes for gas appliances       |
| $\bigcirc$   | Retains a viable gas industry to<br>service needs of 'hard to abate'<br>emissions (electricity, process heat) | $(\times)$   | Closes off options for a just<br>transition based on new gas-based<br>solutions (biogas, hydrogen, bioLPG) |

## 6. MAINTAIN THE INFRASTRUCTURE TO SUPPORT RENEWABLE GAS, RENEWABLE LPG AND HYDROGEN

There are substantial opportunities outlined in this submission to encourage introducing renewable gas, renewable LPG and hydrogen into networks. We do not support a ban on new gas connections, which would be detrimental to achieving the Government's renewable energy goals.

It is essential that pipelines, connections and appliance infrastructure are maintained to support future demand for renewable gas and renewable LPG. Prematurely limiting or closing off these options undermines efforts to develop a renewable gas industry and directly harms energy users in hard to abate sectors that are expected to create significant economic opportunities over the coming years (such as hospitality, horticulture, and food processing).

## 7. PROPOSALS THAT SUPPORT THE OPTION OF ZERO CARBON LPG AND GAS

Acknowledging the potential of renewable LPG and gas, we propose government undertake the following:

- A. Set a renewable gas mandate, namely that a proportion of gas and LPG used in buildings and homes is to come from renewable (non-fossil fuel) source. This mandate should apply from 2025 at a low level, introducing growing renewable fuel supply requirements through to 2050.
- B. Direct the GIC to regulate renewable LPG and renewable gas, oversee a certification scheme, monitor security of supply and report publicly on the emissions profile of the gas and LPG industries.
- C. Do not ban new gas connections; the pipelines, connections and appliance infrastructure must be maintained to support a renewable gas and hydrogen future.
- D. Engage again with the industry, to ensure we have opportunity to input on the detail of these recommendations before the Carbon Emissions Plan is finalised.
- E. Provide for the explicit recognition of the opportunities for renewable LPG and gas in the national energy strategy, with clarity on expected progress and check in dates to assess whether these options are realising their potential.

#### 8. ENERGY QUESTIONS

The following Q and A is part of our submission and outlines Gas NZ's response to specific questions from the discussion paper.

#### Energy Strategy

58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

Gas as a fuel in transition, not only a transition fuel, and we urge Government to factor the growth of renewable gas and renewable LPG into its plan to meet New Zealand's pledge for net zero carbon by 2050.

We also urge the government to involve the gas and LPG industry as it considers the feedback received from the discussion document and the detail of the carbon emissions plan is formed.



We recommend the government set a renewable gas mandate mandate (including renewable LPG and hydrogen).

This is consistent with the government's sustainable transport biofuels mandate proposal. Adopting a similar mandate for gas aligns with government's response to a similar set of circumstances to address hard to abate emissions, desire to repurpose existing infrastructure, challenging economics of low emissions alternatives even with a relatively high carbon price.

Suggestions such as banning new connections, would be detrimental to achieving the Government's renewable energy goals, including unnecessarily off options like hydrogen. It is essential that pipelines, connections and appliances infrastructure are maintained to support future demand for renewable gas, renewable LPG and hydrogen.

#### Setting targets

60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

We recommend a renewable gas mandate and seek to work with government to determine goals and targets that would achieve the emission reductions required to meet New Zealand's carbon budgets.

#### Phasing out fossil gas while maintaining consumer wellbeing and security of supply

61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

One of the key strengths of the New Zealand energy system today is its diversity of supply sources and distribution channels.

This feature of New Zealand's energy landscape has proven particularly valuable in responding to natural disasters, where natural gas and LPG have played significant roles in providing energy continuity, such as following both the Canterbury and Kaikoura earthquakes. This is a strength worth preserving.

The graph below shows the amount of energy distributed around the North Island via existing electricity, gas and liquid fuels (petrol and diesel) networks. This highlights the challenge for distribution networks in the transition to lower carbon energy sources.



Converting liquid fuels demand to electricity will represent a 2.5x increase in the energy flowing across electricity networks in the North Island. As the Commission highlights in its draft advice, the electrification of light vehicles is imperative for New Zealand to achieve its emissions reduction plan.

Fortunately, much of this energy demand may be implemented without increasing existing electricity system peaks (effectively flattening the load curve). However, energy demand served by gas pipelines will be more difficult to transfer since gas and electricity have coincident demand peaks (both supply energy on cold, winter mornings and evenings).

#### Decarbonising the industry sector

Supporting evidence on fleet size and characteristics is welcomed. Supporting development and use of low-emissions fuels

68. What level of support could or should Government provide for development of low emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

There are some regulatory issues to resolve to enable the production of rDME beyond early concept and to make further progress on renewable gas blends. We have been in discussions with the regulator on these matters and understand the GIC is currently exploring, options for regulating renewable LPG, rDME and other renewable gases (such as hydrogen) in the future.

## 9. BUILDING SECTION

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

We do not support a ban on new connections, which would be detrimental to achieving the Government's renewable energy goals, including unnecessarily closing off options like hydrogen. We also note that a ban on new connections was not included in the Climate Change Commission's final advice.

Work is well underway to introduce renewable gas and renewable LPG into homes and businesses starting 2025.

The industry has invested in studies and pilots that support the viability of phasing in renewable LPG and gases into the New Zealand network. The policy settings and regulatory environment is critical. With the right policy settings in place, blends can start in the next few years.

We share the Government's view that there are hard to abate activities that cannot be economically electrified due to the high temperatures and scale involved. It is forecast that renewable electricity alone will not achieve the government's proposed energy targets and natural gas and LPG will be needed for some years yet to maintain some high value processing and manufacturing activities that are essential to our economy and to ensure thriving communities through the transition. There are substantial opportunities for the circular economy in the 'waste' feedstock needed for renewable LPG and gas, while at the same time providing regional prospects for industry, local communities, iwi, and Māori businesses, to be part of a carbon zero future. We are already working with a number of these groups to ensure opportunities are supported and the industry maintain a social licence to operate.

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

The industry is already working to adopt existing renewable LPG and renewable gas technologies from overseas into New Zealand.

We consider the best way for addressing the 'phase-out' of fossil fuel in buildings is to squarely focus on the 'phase-in' of renewable fuels by way of setting a renewable gas mandate.

74. Do you believe that the Government's policies and proposed actions to reduce building related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

Please see response to question 75 below.

A focus on the phasing-in of renewable gases rather than a ban on new connections for example brings opportunity and choices for customers, iwi and regional communities.

75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?

There are substantial opportunities for the circular economy in the 'waste' feedstock needed for renewable LPG and gas, while at the same time providing regional prospects for iwi and Māori businesses.

Iwi have repeatedly expressed a desire for devolved funding models and decision-making. A renewable gas mandate provides opportunity for iwi to determine what options are best for them in a low carbon future. A renewable gas mandate simply reduces reliance of fossil gases in line with the carbon emissions budget, without ruling specific fuel sources in or out.

Further, renewable energy opportunities will be dispersed across regional boundaries. This will lead to further opportunities for iwi in their respective rohe (regions) to be involved in developments and to work with others. The Tūaropaki Trust is an example. The trust's diverse business portfolio includes a geothermal power station, hydrogen energy production, engineering and drilling services; all of which meet the challenges of, or respond directly to a new energy future.

The gas and LPG industry consider iwi involvement in the transition critical to a renewable gas and LPG future and is already working with iwi and Māori businesses to ensure inclusion, that opportunities are supported, and the industry maintain a social licence to operate.

26 November 2021



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## Transitioning to a low-emissions and climate-resilient future

New Zealand is setting increasingly ambitious emissions reduction goals, in line with the scale of the challenge posed by playing our part in addressing anthropogenic climate change. As New Zealand's most diverse energy business, Genesis supports and shares this ambition. This is reflected in our purpose of *empowering New Zealand's sustainable future*.

The transformation required for New Zealand to reach net zero will necessarily touch every part of the economy. This transition creates significant opportunities to leverage New Zealand's natural advantages, but we agree with the Climate Change Commission that there is a risk that the costs of the transition are unevenly felt<sup>1</sup>.

Accordingly, a carefully considered and evidence-based approach is required, that takes into account the many interdependencies within and between different sectors in the economy.

New Zealand has a key competitive advantage over almost all of our international peers seeking to decarbonise, in that our highly renewable, low-carbon electricity system can be utilised to power carbon-intensive parts of the economy. It is widely recognised that electrification of transport and many process heat applications could quickly and significantly reduce New Zealand's emissions.

To ensure we make the most of our strengths, and achieve a just and orderly transition:

- 1. New Zealand needs a 30-year low-carbon energy strategy built on cross-sector 'systems' thinking. We set out the key questions this strategy should address in this submission.
- 2. New Zealand must leverage the competitive advantage offered by our highly renewable, low-carbon electricity system. This is key to decarbonising the wider economy.
- 3. Existing investment signals which incentivise investment in renewables, such as the Emissions Trading Scheme, must be balanced by ensuring the backup thermal capacity that enables our renewable system remains available. Consideration should be given to what supports this backup if the current commercial arrangements do not continue.

<sup>&</sup>lt;sup>1</sup> Climate Change Commission, Ināia tonu nei: a low emissions future for Aotearoa

4. Any targets or goals should be evidence-based and focused on the best decarbonisation outcome, taking into account cost and distributional effects.

Our responses to questions with specific relevance to Genesis, upon which we are particularly well placed to comment, are set out below.

In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

A successful strategy would mobilise investment and markets to accelerate our transition and deliver a dependable, low cost and low emissions energy system. This system will underpin the country's transformation. The key questions we believe an energy strategy should address are:

- (a) How can the interplay between different parts of the energy system be balanced to ensure New Zealand's biggest advantage renewable electricity supports decarbonisation of transport and industrial heat?
- (b) What is the lowest cost and most productive pathway to a low-carbon energy future? Consideration should be given to the sequencing of the transition, interdependencies and timeframes, with key staged outcomes highlighted.
- (c) Where today's technology cannot enable economic electrification, what alternative fuels might need to play a role?
- (d) How can we balance the energy trilemma ensuring a secure and affordable supply of energy while meeting the country's sustainability objectives?
- (e) How should New Zealand maximise its renewable electricity advantage to create new long-term competitive advantages, with the research and development settings to enable future sectors to emerge?

#### Interconnectedness of the energy system

The strategy must focus on the broad production and use of energy – not just electricity. There are many different sources of energy – including wind, solar, geothermal, hydro, gas, coal, bioenergy, and petroleum. There are multiple interdependencies in the products those sources enable, from generating electricity, empowering transportation, creating steam to dry milk, smelting aluminium, manufacturing steel, to producing methanol and agricultural fertilisers.

Energy is the lifeblood of society and critical to the way we live and work. It is too important not to understand its interconnectedness.

Today, electricity costs are influenced by a variety of factors including the price of fossil fuels. Any actions that impact one area will be reflected by costs elsewhere.

The supply side (electricity generation, for example), cannot be considered independently of demand-side circumstances. Investors will be reluctant to commit capital when there is material uncertainty regarding demand-side conditions. This was recently demonstrated by

delayed investment in new renewable electricity projects due to uncertainty around the future of the Tiwai Point aluminium smelter<sup>2</sup>.

There is the risk of similar medium-term delays to developing lower carbon energy storage while uncertainty around a potential post-2030 storage solution, whether it be pumped hydro storage or another technology, is resolved.

#### Lowest cost, most productive

Taking advantage of our lowest cost options in the most logical order gives us the best chance of achieving our decarbonisation goals.

In New Zealand, a large proportion of electricity and process heat emissions are produced by a relatively small number of sites. This gives us the opportunity, rare internationally, of being able to understand the full picture in detail and respond accordingly.

The cost of technology like solar panels, hydrogen and other green gases can be expected to continue to fall over time and may ultimately enable an affordable 100% renewable electricity system. In the meantime, we should consider the opportunity that a 'net-zero' electricity system could unlock, and whether this goal is more practical and economic than a system powered by 100% renewable sources.

#### Look at alternatives where electricity is not suitable

The technology to substitute internal combustion light vehicles with electric equivalents is mature today. Upfront cost has historically been a barrier to uptake, but the gap is shrinking.

Bloomberg New Energy Finance predicts that electric vehicles will cost the same as their fossil-fuelled equivalents by the middle of this decade<sup>3</sup>. This could happen even faster with the right policy settings. Given road transport currently accounts for about 20% of New Zealand's emissions, substituting petrol and diesel for low-carbon (or net-zero) electricity is a significant opportunity.

However, there are certain applications where electricity will not be suitable. As the technology stands, these include long haul and heavy transport and aviation. In these areas it makes sense to look at what other decarbonisation opportunities are available, such as through using biofuel blends or hydrogen, or increasing the use of electrified rail for freight.

Similarly, electricity is an ideal low-carbon substitute for coal in certain low- and mediumtemperature heat applications. Lowering the barriers to fuel switching, in particular network connection costs, should be a priority.

In other cases different low-carbon options, including biomass, will be the most practical and affordable. Electricity will not be appropriate for some high-temperature applications with current technology and costs. For these activities the best approach is to accept hydrocarbons will continue to play a role, and look at what can be achieved through process change and using lower carbon fuels.

<sup>&</sup>lt;sup>2</sup> "The anticipated reduction in demand had already paused or halted several renewable energy developments." – Electricity Authority, 2021, <u>https://www.ea.govt.nz/about-us/media-and-publications/market-commentary/market-insights/futures-prices-</u> respond-to-tiwai-announcement/

<sup>&</sup>lt;sup>3</sup> Bloomberg NEF Electric Vehicle Outlook 2020

#### **Balancing the trilemma**

New Zealand's energy strategy must plot a path that ensures there is access to the energy needed to power our economy at prices people can afford, as the economy transitions to netzero.

The World Energy Council calls this the 'energy trilemma' – how countries balance the sustainability, security, and affordability of energy<sup>4</sup>. New Zealand has historically performed well in balancing these objectives<sup>5</sup>.



These outcomes are not mutually exclusive, but a low-carbon energy pathway must consider how any steps impact upon them and to keep them in balance where possible. Again, understanding and having regard to the interdependencies is key.

#### Maximising our renewable competitive advantage

New Zealand is world-leading in the use of renewable electricity, but other nations are investing heavily to catch up. While they do, New Zealand has an opportunity to make the most of its head start. As the world decarbonises, New Zealand has an opportunity to develop expertise and IP around how we decarbonise large energy consuming sectors beyond electricity.

For example, Denmark has become a world leader in wind energy technology over the past few decades through R&D, innovation and investment. It connected the world's first multimegawatt turbine to the grid in 1978<sup>6</sup>, and the world's first offshore wind farm in 1991<sup>7</sup>. In Denmark's electricity sector wind power produced nearly half of the country's total electricity consumption in 2019. Denmark now has a strong export industry in wind turbines.

<sup>6</sup> https://www.power-technology.com/features/oldest-operating-wind-turbine-tvindkraft/

<sup>&</sup>lt;sup>4</sup> World Energy Council, <u>https://www.worldenergy.org/transition-toolkit/world-energy-trilemma-index</u>

<sup>&</sup>lt;sup>5</sup> WEC Trilemma: Country profile (worldenergy.org)

<sup>&</sup>lt;sup>7</sup> https://www.renewableenergyworld.com/storage/history-of-wind-turbines/#gref

With the right mindset, incentives and public-private models, New Zealand could develop a similar export proposition for the future by learning how to electrify industry ahead of our competitors. While the world focuses on decarbonising electricity we should be working on the next industrial advantage for New Zealand – the electrification of industry.

Government investment activity, for example through NZ Green Investment Finance and hypothecation of ETS revenues, should therefore focus on both driving decarbonisation and growing the industries of the future.

#### What areas require clear signalling to set a pathway for transition?

In our view, there is ample evidence that markets are providing appropriate signals for greater investment in renewable electricity generation. This is demonstrated by the pace of change in the electricity system. It is less clear whether these signals are being as effectively received in the more carbon intensive areas of the energy sector.

The New Zealand Emissions Trading Scheme (ETS) is already a powerful tool in setting investment signals for decarbonisation. All the more so since emissions under the ETS are capped and there is now a greater degree confidence in the future price path.

Even before these developments, the ETS already provided a strong signal in respect of electricity generation. While not the only driver, rising carbon prices have been an important influence in reducing generation from Genesis' thermal Rankine units at Huntly Power Station.



<sup>8</sup> Genesis analysis.

Genesis is clear that baseload thermal generation has had its day. We have a clear strategy to further decarbonise our operations. Overall, we are pursuing a target verified by the Science Based Targets initiative that will see us remove more than 1.2 million tonnes of annual carbon emissions over the next five years. We aim to reduce generation emissions by 36% by 2025. This comes on top of having reduced carbon emissions by 1.8 million tonnes over the 10 years leading into 2020.

Our Future-gen strategy is a key part of how we intend to achieve this ambitious target. Through Future-gen, we are aiming to secure 2,650 GWh a year of renewable electricity generation by 2030, with the majority before 2025. We are on track and our strategy has already achieved some significant milestones. Waipipi Wind Farm, constructed with the support of a 20-year offtake contract with Genesis, was commissioned in March 2021 and will provide about 455 GWh of zero carbon electricity per annum.

Genesis has also contracted renewable geothermal generation to displace up to 500 GWh of baseload thermal a year from our activities, committed to supporting the development of approximately 230 GWh a year of new wind generation in Northland, and has entered into a Joint Venture to develop to up 750 GWh of grid-scale solar generation.

Our competitors are embarking on their own major investment programmes, representing the most nationwide renewable electricity investment in a decade. Genesis' activities alone will see New Zealand's electricity system reach about 90% renewable by 2025, and 93% renewable by 2030.





While increasing the proportion of renewables in New Zealand's already world-leading electricity system is encouraging, maximising this advantage relies on the electricity system achieving levels of affordability and reliability that make electricity the fuel of choice for currently high-emitting activities such as transport and industrial processes.

For the foreseeable future, that means ensuring that an appropriate level of thermal generation is available to provide crucial and affordable backup to the electricity system when the rain does not fall, the wind does not blow, and increasingly when the sun does not shine.

<sup>9</sup> Genesis analysis.

Genesis agrees with the Climate Change Commission that it is likely thermal backup will be required to ensure a reliable and affordable electricity supply for some time, and that:

Removing fossil gas too quickly from the system could increase electricity prices and reduce reliability. This could have significant consequences for the electrification of transport and low- to medium-temperature process heat – two big opportunities for reducing emissions in Aotearoa.<sup>10</sup>

The importance of thermal backup was clearly illustrated in the first half of 2021, when a combination of low rainfall and gas supply constraints left the system reliant on coal-fired thermal electricity. If this generation had not been available there would almost certainly have been widespread supply interruptions with all the attendant economic and wellbeing impacts.

Accordingly, any comprehensive national energy strategy must address the question of how essential backup generation (and the fuel required to run it) can continue to be available in an environment when its economics are increasingly challenged by lower cost, but intermittent, renewable sources.

This crucial thermal backup has been secured in recent years via bi-lateral agreements between Genesis and other market participants. Those contracts end in December 2022, and it is currently unclear whether similar new agreements will be agreed and entered into to underpin backup generation from 2023 and beyond.

It appears other market participants' appetite to share the increasing cost of providing backup to the renewable electricity system is low. An effective energy strategy should consider whether appropriate incentives are in place to ensure a safe and stable transition over the next 10-15 years.

Genesis does not consider root and branch reform of the wholesale electricity market is likely to be necessary. However, electricity market settings should be a consideration in the development of a low-carbon energy pathway.

## What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

The Government's level of ambition should match the scale of the challenge of reaching netzero carbon by 2050. Goals and targets should be set over appropriate timeframes, relative to the overall objective and based on sound evidence and analysis.

Genesis considers ambitious renewable energy targets can help New Zealand leverage the benefit of its already low-carbon electricity sector, maximising our strategic advantage.

Conversely, the 100% renewable electricity by 2030 target would have negligible direct impact on emissions and impose very high costs which could constrain decarbonisation of other sectors. We urge the Government to abandon this target as the Climate Change Commission suggests.

<sup>&</sup>lt;sup>10</sup> Climate Change Commission, Ināia tonu nei: a low emissions future for Aotearoa



# Electricity is decarbonising, but the last few percent will be challenging

11

An overall renewable energy target would be an improvement. However, several aligned carbon reduction goals that can be tracked and reported against over time may prove more valuable than a single renewable energy target. This approach recognises the varied and dynamic nature of the system and provides more useful information on where investment in emissions reduction is best directed.

Metrics to consider include energy productivity, which would demonstrate how efficiently (or otherwise) New Zealand is using its energy resources. Similarly, a carbon productivity metric could be a useful indicator to demonstrate whether the economy remains healthy as emissions are driven out.

'Net zero' is a more appropriate goal than 100% renewable, if an electricity target is to be adopted at all. Aiming for net zero shifts the focus to deciding whether to offset the emissions that arise from the last few percent of backup thermal and geothermal, or switch to a different fuel source. This way focus is on the most economically rational approach to decarbonising the economy.

What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

In principle, Genesis favours market solutions and incentives as tools to accelerate decarbonisation, as opposed to bans or intrusive interventions.

The way in which the ETS provides an incentive to invest in renewable electricity is one example, as set out earlier. We expect that this will be the case across sectors over time as rising emissions costs are increasingly felt.

<sup>&</sup>lt;sup>11</sup> Ministry for the Environment, 2019

Taking a system-wide view of the energy sector, Genesis is not convinced measures such as banning thermal electricity generation or new natural gas connections are along the fastest route to reducing emissions.

Interventions are more likely to create positive consumer sentiment and outcomes if the focus is on incentivising desirable investments such as renewable electricity, electric vehicles and biofuels. Banning natural gas connections, for example, risks stranding natural gas infrastructure that could be used for the deployment of green gases in future and which could play an important role in the overall future energy mix.

We understand that the capability to certify and track green gases through the system exists today and businesses in New Zealand and abroad are developing green gas technology at pace. In that context, we believe it makes sense to maintain the availability of the transmission and distribution infrastructure that could unlock significant value from this technology (and other low-carbon alternatives).

Genesis accepts that the risk of consumers locking themselves in to investments that are at risk of becoming obsolete needs to be carefully managed. We consider that this challenge is best met with information – ensuring consumers are able to make informed choices from a full suite of options.

#### Conclusion

Genesis shares the Government's ambition for the decarbonisation of New Zealand's economy. We understand our role in meeting the challenge and are well along the way to reducing our carbon footprint.

New Zealand's low carbon electricity system, and the wider energy system of which it is a part, are key to achieving the country's goals. A carefully considered and clear strategy, with input from across society, is necessary to ensure the smoothest and lowest cost transition.

Genesis looks forward to contributing to the development of a strategy that ensures New Zealand follows the right trajectory and correctly sequences priorities, for the benefit of all New Zealanders.

Yours faithfully GENESIS ENERGY LIMITED



Marc England Chief Executive Officer

| From:        |
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| Sent:        |
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| Cc:          |
| Subject:     |
| Attachments: |
|              |

Wednesday, 24 November 2021 2:29 pm climate consultation 2021

Emissions Reduction Plan - submission from GREAT SOUTH 2021 Great South submission to MfE - ERP discussion document.pdf; Net Zero Southland Report\_Final STC 20-07-21.pdf; Housing\_Report\_Final.pdf

## MFE CYBER SECURITY WARNING

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Good afternoon,

Please find attached a submission from Great South on the *Transitioning to a low-emissions and climate-resilient future* document released by Ministry for the Environment.

Please also find attached supporting documentation; Net Zero Southland report, and Southland Housing Situation Analysis report.

Great South give their consent to have our submission published on the MfE website.

Kind regards,





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# A Submission from Great South

Transitioning to a low-emissions and climate-resilient future

A submission from Great South (Southland's Regional Development Agency) to Ministry for the Environment on their discussion document *Te hau marohi ki anamata Transitioning to a low-emissions and climate-resilient future.* 



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If you have any suggestions, complaints, or any other feedback, please contact us at info@greatsouth.nz

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# Abbreviations

| Term | Definition  |
|------|---|
| СВАМ | Carbon Border Adjustment Mechanism  |
| CCRA | Climate Change Response Act 2002  |
| DIY  | Do it yourself  |
| DoC  | Department of Conservation  |
| EDNZ | Economic Development New Zealand  |
| ERP  | Emissions Reduction Plan  |
| ETS  | Emissions Trading Scheme  |
| ETS1 | Emissions Trading Scheme 1 – as per the Climate Change<br>Commission carbon price modelling for all gases other than biogenic<br>methane. |
| ETS2 | Emissions Trading Scheme 2 – as per the Climate Change<br>Commission carbon price modelling for biogenic methane only.                    |
| EU   | European Union  |
| EV   | Electric Vehicle  |
| GDP  | Gross Domestic Product  |
| H&S  | Health and Safety   |
| ICE  | Internal Combustion Engine  |
| IPCC | (United Nations) Intergovernmental Panel on Climate Change  |
| IPPU | Industrial processes and product use  |
| ITP  | Industry Transformation Plan  |
| LFG  | Landfill gas  |
| LNG  | Liquid natural gas  |
| LPG  | Liquid petroleum gas  |
| MAC  | Marginal abatement cost   |
| MfE  | Ministry for the Environment  |
| NDC  | Nationally Determined Contribution  |
| NLTP | National Land Transport Plan  |
| NZS  | Net Zero Southland (report)   |
| PPE  | Personal protective equipment   |
| R&D  | Research and development  |
| ROI  | Return on investment  |
| RSI  | Research, science, and innovation   |
| SIPs | Structural insulated panels.  |
| TP1  | Transition Pathway One  |
| UK   | United Kingdom  |

# **Executive Summary**

A published Emissions Reduction Plan (ERP) is a requirement under the Climate Change Response Act 2002 (CCRA) and sets out how New Zealand will meet its climate targets. The New Zealand Government has committed to having the first ERP published and released by May 2022.

Ministry for the Environment (MfE) are undertaking preliminary consultation on a high-level transition pathways document to understand what additional actions and commitments sectors could advance to help ensure New Zealand will meet its climate commitments under the Paris Agreement.

For the past 15 years, Great South (Southland's Regional Development Agency) has been leading initiatives to support Southlanders achieving a net zero future through innovative, collaborative, and resilient approaches. Southland is committed to achieving net zero emissions by 2050 and supporting our nation to achieving its climate commitments.

This document captures Great South's response to the recently released for public consultation document *Transitioning to a low-emissions and climate-resilient future* (hereon referred to as the Plan).

# Foreword from Great South

Great South has been at the forefront of innovative and forward-thinking initiatives to not only propel the Southland region toward a carbon neutral future, but to ensure the journey is one that is resilient and economically sustainable. Below is a snapshot of some of the key projects Great South has led for the region. Each of these projects has increased our knowledge, understanding and implications of a fast-changing climate and the potential effects and impacts for Southland.

- 2005 Development of the Southland Energy Strategy (updated in 2012 and is currently being updated for 2021).
- 2008 Development of the Southland Sustainable Business Strategy.
- 2014 In partnership with EECA (Energy Efficiency and Conservation Authority) Great South established the Wood Energy South project, which is aimed at facilitating the establishment of new commercial heating systems fuelled by wood and woody biomass.
- 2018 In partnership with MfE and The Tindall Foundation, Great South led the Carbon Neutral Advantage (CNA) project for Southland; a three-year jointly funded program to support Southland (industry, businesses, and community) to transition to a carbon neutral emissions future.

Great South has recently developed the Net Zero Southland report which provides potential emissions reduction pathways for our region. This has been well received by local stakeholders. Many industries and sectors are now seeking to implement decarbonisation pathways and Great South believes that assistance is required to support education and training in these areas of planning and implementation.

#### Net Zero Southland

The Net Zero Southland report is an economic mitigation pathways analysis for **how** Southland can achieve net zero emissions by 2050. Development of this report falls within the Carbon Neutral Advantage Project and was published late-March 2021.

The purpose of the Net Zero Southland report is to establish a baseline for carbon abatement and a high-level economic assessment of achieving net zero greenhouse gas emissions at regional scale. Key outcomes from the report are the identification of potential mitigation options for the Southland region, and the economic effect of these options towards achieving net zero emissions by 2050, which is in line with the mandated Government directive of achieving net zero emissions by 2050 on a national scale.

Key findings from the Net Zero Southland report show:

- 1. Under Business as Usual, Southland is **not** on track to reach net zero emission by 2050.
- 2. Southland **can** achieve net zero emission by 2050 with a positive net financial outcome achieved through a diverse portfolio of mitigation options.
- 3. Action must be embraced across **all** sectors to give effect to emissions reduction for the region.

The Net Zero Southland report models 15 potential mitigation options ranging from light vehicle transition to electric vehicles to decarbonisation of fossil fuelled boilers to biogas capture to land use change. Of the 15 mitigation options modelled, 80% return a net positive financial gain for Southland (Figure 1). The identified potential mitigation options reflect participation from all industries.



Figure 1 - The estimated emissions abatement potential and the net cost of achieving abatement, is represented here in the Marginal Abatement Cost Curve. Each column in the graph represents a mitigation option with the height of the column representing the cost of abatement and the width of the column representing the average annual abatement potential. All options beneath the zero axis represent a positive financial outcome.

#### **Physical and Economic Risks**

In the Southland setting, which will be true of many areas in New Zealand, recent evidence shows that we will see higher intensity rainfall and flooding on the main river systems, increasing coastal inundation, longer periods of drought in inland areas. This will impact on tourism particularly in areas such as Fiordland and in coastal margins and will also create a need for the adoption of a new paradigm surrounding our agricultural sector and productive systems. Value-added processing will increasingly be expected to be low carbon or carbon neutral.

The Net Zero Southland report highlighted the **physical and economic risks** associated with Southland not achieving net zero emissions by 2050. These results incorporate the work undertaken by NIWA in 2018 in a report<sup>1</sup> prepared for Environment Southland, Invercargill City Council, Southland District Council and Gore District Council.

Key findings show:

- 1. Projected changes in the climate are diverse, reflecting geographic variability within the region. Changes include (but are not limited to) river and surface flooding in parts of the region, increased rainfall, rising surface temperatures, and increased hot days and greater risk of drought.
- 2. Economic impacts from changes in the climate are most strongly felt in the agriculture and tourism sectors. Impacts include fluctuations in crop yields and livestock productivity, pasture damage, increased expenditure to minimise flood impacts, infrastructure damage (e.g. airports) and loss of natural assets (e.g. walking and hiking trails).
- 3. All sectors benefit from acting early to implement emissions reduction strategies and limiting climate change impacts.

Southland's agriculture and tourism sectors stand to be the most affected by the effects of climate change.

<sup>&</sup>lt;sup>1</sup> NIWA, 2018 "Southland climate change impact assessment".

#### Current Regional Challenges and Emerging Opportunities

Decarbonisation of thermal energy, transport and process systems will see an increasing need for the use of renewable energy, biomass, and biogenic methane and an even greater need for energy efficiency and an unprecedented need for new electricity generation. In response to this need, Southland is about to commence its fourth Energy Strategy which follows on from earlier work completed in 2003, 2005 and 2012. The Strategy is aimed at providing clarity around energy needs, new generation options, emerging technologies and industry decarbonisation options for all sectors and activities within the Southland economy including agriculture.

It is recognised that the development of a national energy strategy is essential to assist in the decarbonisation pathway. Regional strategies should feed into a national energy strategy.

The main challenge for agriculture is the very high levels of methane emissions, with one tonne of methane being the equivalent of up to 27 tonnes of carbon dioxide equivalent<sup>2</sup>. This situation doesn't leave too many choices other than to reduce or capture emissions. Therefore, competitive high value land-use options must be developed to accommodate the natural productive capacity of the soils to in turn stimulate partial or wholesale changes in land use and provide returns to farmers that enable legacy debt to be retired. Additionally, effective capture and use of biogenic methane has never been more important than it is today.

<sup>&</sup>lt;sup>2</sup> Forster, P., T. Storelvmo, K. Armour, W. Collins, J. L. Dufresne, D. Frame, D. J. Lunt, T. Mauritsen, M. D. 38 Palmer, M. Watanabe, M. Wild, H. Zhang, 2021, The Earth's Energy Budget, Climate Feedbacks, and 39 Climate Sensitivity. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I* 40 *to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. 41 Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, 42 K.Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou43 (eds.)]. Cambridge University Press. In Press.

# General Comments from Great South

Great South would like to thank you for the opportunity to provide a submission to the Plan. Great South is generally supportive of the actions within the Plan.

It is acknowledged that a truly sustainable, equitable and climate resilient future will be greatly enhanced if we adopt a more complete framework for future investment factoring in economic, cultural, social, and environmental factors and that future industry investment should strongly discourage externalisation of costs i.e., socialising costs across citizenry or communities.

The principles of a circular economy and living within planetary boundaries may fundamentally impact growth-based economies and that an Inclusive Wealth Index (IWI) approach would provide insights into long-term economic growth and human wellbeing. Such an index would measure the wealth of New Zealand through a comprehensive assessment of all the country's production base and the country's wealth in terms of progress, wellbeing, and long-term sustainability including environment and fundamental human needs.

It is noted that current proposed policies will leave a significant gap between actual emissions reduction, and our international commitments, which will require significant amounts to be paid towards international carbon costs. We would prefer that the New Zealand Government invest a higher proportion of that money in New Zealand now to drive greater emissions reduction within New Zealand.

At the time of preparing this submission, Great South is seeking to better understand the impacts of COP26<sup>3</sup> on emissions reduction and priorities for New Zealand and would welcome the dissemination of updated information to support abatement planning.

<sup>&</sup>lt;sup>3</sup> Conference of the Parties (COP) – COP26 is the 26<sup>th</sup> annual summit bringing together (most) countries on earth for global climate summits. Hosted by the United Nations.

# Great South Response to Consultation Questions

#### Meeting the net-zero challenge

#### **Transition pathway**

1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above, the correct ones? Please explain why or why not.

Yes -in support of guiding principles as per the ones represented here.

**Recommend** that a circular economy and living within planetary boundaries should be a guiding principle for the transition.

- 2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable, and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?
  - Improving visibility of the cost of emissions for businesses for example reporting the percentage of fuel costs attributable to emissions taxes on the petrol pump or fuel invoicing systems.
  - Consider waiving or reducing fringe benefits tax on low emission technology especially for early adopters when prices are high.
  - Provide clear signals in government procurement, budget, and other policies.
  - Ensure supply security for biomass to accelerate conversions of coal boilers. This may require the development of government owned forests or forest contracts that are dedicated for fuel supply, not to be sold on the export market to ensure price viability for fuel switching on long term investments. A good example here is the long-term supply agreements for domestic pulp and residues supply to the pulp and paper mills within New Zealand.
  - Investigate the introduction of a feebate pricing mechanisms on recycled versus virgin materials/products.
  - Reform the ETS with a hard cap on units to match our emissions budgets. This will ensure the price of units reflects the real market value and will spur the private sector to consider decarbonisation options earlier.
- 3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?
- 4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?
  - Develop capability to accurately identify and quantify smaller planting areas and incentivise areas of permanent native biodiversity.
  - Promote natural materials/bioeconomy from native flora (e.g. harakeke) food and fibre.
  - Promote and stimulate R&D to develop high value products from pest species e.g. Undaria pinnatifida (invasive edible seaweed), Araujia hortorum, possum furs etc.
  - Increase investment and knowledge of the carbon sequestration potential that could be realised through sustainable management of our oceans and soils.
- 5. Are there any other views you wish to share in relation to the Transition Pathway?

#### Helping sectors adapt

- 6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?
  - Localised, regenerative, and resilient food networks that decrease the travel, production and land use emissions associated with food. The resilience aspect is most significantly realised through the adoption of polyculture methods that increase crop diversity.
  - **Mode shift.** Changing how we travel changes the types of infrastructure we require. These may be smaller and more economical to rebuild and maintain following disruptive climate events.

- **A move towards smaller buildings.** Smaller buildings require less energy to heat, consume fewer materials to produce and are more easily movable if such steps are necessary for climate adaptation.
- Increasing and retaining native forests and wetlands.
- 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?
  - Building new low emission infrastructure in locations that are likely to be affected by the physical risks associated with climate change.
  - Not utilising existing old buildings to provide (potential) shelter for the homeless or those requiring emergency housing.

#### Working with our Tiriti partners

- 8. The Climate Change Commission has recommended that the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. Which, if any, of the strategies listed are a particular priority for your whānau, hapū or iwi and why is this?
- 9. What actions should a Māori-led transition strategy prioritise? What impact do you think these actions will have for Māori generally or for our emission reduction targets? What impact will these actions have for you?
- 10. What would help your whanau, community, Māori collective or business to participate in the development of the strategy?
- 11. What information would your Māori collective, community, or business like to capture in an emissions profile? Could this information support emissions reductions at a whanau level?
- 12. Reflecting on the Commission's recommendation for a mechanism that would build strong Te Tiriti partnerships, what existing models of partnership are you aware of that have resulted in good outcomes for Māori? Why were they effective?

#### Making an equitable transition

#### **Equitable Transitions Strategy**

The Commission recommends developing an Equitable Transitions Strategy that addresses the following objectives: partnership with iwi/Māori, proactive transition planning, strengthening the responsiveness of the education system, supporting workers in transition, and minimising unequal impacts in all new policies.

13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?

We agree with the objectives of the Equitable Transition Strategy as described. We would encourage an alignment between the Equitable Transition Strategy and the Emissions Reduction Plan to ensure consistency of goals, objectives, and deliverables.

14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission and any other objectives that you think should be included in an Equitable Transitions Strategy?

Particularly agree with:

- Pre-emptive research to identify those who will be most affected and develop strategies in advance.
- Assessing the actual impacts of current policies to guide future policy decisions.
- Inviting real time feedback from affected groups as a priority action to enable evidence-based decision making.

Ensuring that:

- Major changes to transport systems do not unduly penalise or reduce accessibility for less mobile and elderly citizens or reduce quality of life for all citizens.
- Transitioning workforces are not displaced from their homes and regions or led into alternative work that does not adequately suit them.

The Commission suggests that the Equitable Transitions Strategy should be co-designed alongside iwi/Māori, local government, regional economic development agencies, businesses, workers, unions, the disability community, and community groups.

15. What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?

Comprehensive identification of relevant groups as enabled through regional agencies with local contacts. Identification of umbrella organisations (e.g., Economic Development New Zealand EDNZ) who can act as a conduit and consult with their members to initiate discussion and early feedback.

#### Other actions

16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

Community events that bring people together and incorporate fun and free food are likely to receive good attendance. These events should identify and draw on local champions who can share their experience and raise awareness that these choices are available and accessible for their peers in a similar demographic.

17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

It is suggested that Government should consider offering new job opportunities that stem from new developments, to workers that have been affected by the closure of their workplace. A good example of this is the imminent closure of New Zealand Aluminium Smelter (NZAS) and the potential establishment of a green hydrogen production facility. Many workers from NZAS may have complimentary skills that could transfer to the hydrogen production facility.

18. What additional resources, tools and information are needed to support community transition planning?

Consider incentivising suitable low-emission firms to locate to regions where there will be high employment needs.

19. How could the uptake of low-emissions business models and production methods be best encouraged?

Low interest loans for low emissions ventures.

Introducing a mandatory emissions labelling scheme on products. This may work as emissions per 100g for food products and lifecycle emissions for technology products such as cars and cell phones.

Developing prestigious awards and expos that provide a competitive marketing incentive for low-emission businesses.

Advocating for business award schemes to include low-emission criteria as a pre-qualifier.

20. Is there anything else you wish to share in relation to making an equitable transition?

#### Aligning systems and tools

#### Government accountability and coordination

21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

Strongly advocate for a more granular approach to emissions targets across each budget period.

**Recommend** that progress toward these targets is reported annually.

**Request** greater information sharing between central government and regional reporting facilities in the case of government funded projects within regions (for example EECA industry and private sector projects). Great South have monitored regional emissions over the last three years and plan to continue this work. We have also produced the Net Zero Southland report – modelling an abatement pathway for our region out to 2050. Both projects allow us to track carbon abatement within our region – for example boiler conversions, or forestry area planted. We will use this regionally specific data to drive behaviour change. Reporting our successes and monitoring our progress against modelled pathways is crucial to fostering and accelerating regional action.

Strongly support the development of more real-time data, tracking and feedback.

Ensure that any new plans for emissions reductions in each government department align with national budgets and targets.

- 22. How can new ways of working together like mission-oriented innovation help meet our ambitious goals for a fair and inclusive society and a productive, sustainable, and climate-resilient economy?
- 23. Is there anything else you wish to share in relation to government accountability and coordination?

**Recommend** sharing tools and approaches developed at a national level with regional, local government, business sectors and communities who may also benefit (for example procurement guidelines, cost benefit analysis tools, decision support tools and monitoring and reporting approaches).

#### **Funding and financing**

- 24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?
  - Unproven start-up nature of many ventures and technologies.
  - Rate of change (fear of rapid redundancy).
  - Uncertainty around fuel supply (biomass or biogas) and pricing for fuel switching investments.
  - Hesitancy to be an early mover as the 'price of technology' will change as technology advances (batteries, EVs, solar arrays).
  - Insulating against the true cost of carbon for some high emitting sectors and industries.
- 25. What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?
- 26. What else should the Government prioritise in directing public and private finance into lowemissions investment and activity?
- 27. Is there anything else you wish to share in relation to funding and financing?

We suggest consideration is given to re-investing funds secured from emitting sectors via the ETS (for example).

#### **Emissions pricing**

28. Do you have sufficient information on future emissions price paths to inform your investment decisions?

**Recommend** that the role of investment firms and speculators in the carbon trading market should be closely reviewed. Their participation could have significant adverse effects for those who need to purchase units from the ETS and spur un-real price increases which will be felt by the wider economy in price increases.

**Recommend** reforming the ETS with a hard cap on units which match our emissions budgets. This will ensure the price of units reflects the real market value and will incentivise the private sector to consider decarbonisation options earlier.

#### 29. What emissions price are you factoring into your investment decisions?

In the Net Zero Southland Report econometric modelling the following carbon pricing assumptions were used: TP1 carbon price projections for biogenic methane, ETS2, and all other gases, ETS1, from the Climate Change Commission's Draft Advice for Consultation report.

30. Do you agree the treatment of forestry in the New Zealand Emissions Trading Scheme (NZ ETS) should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

#### Strongly agree.

31. What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider ensuring we do not unnecessarily restrict forest planting?

In the Southland and Otago regions, the conversion of productive agricultural land into plantation forestry is already evident. Domestic and overseas investors are responding to the clear signals around carbon pricing, and the relatively low maintenance and associated costs (comparative to farming) of converting land.

This is of significant concern within our region and communities. While exotic forestry offers many benefits to the region (potentially increased source of biofuels, low emission materials, carbon sequestration, economic return from investment and some employment opportunities), it is also associated with many negative effects and considerations, especially as compared to permanent native forests, and in some cases agricultural land use.

There are well founded concerns that this may risk reducing populations and stability of rural communities. A Southland based study conducted by the Agribusiness and Economics Research Unit at Lincoln University finds that the conversion of land from farming to forestry results in a decrease in on-land employment from 9.1 FTEs to 2.3 FTEs per 1000 ha<sup>4</sup>. Great South are currently undertaking further research into the social and economic implications of land use change to forestry in the Southland Region.

In the case of converting highly productive agricultural land to exotic forestry, soil health can be significantly degraded, and may take several years to be returned to previous health if land use was ever to be converted back.

#### Regarding options presented to constrain forestry:

**Recommend** including levers to favour multi-modal land use on each land use parcel. For example, planting based on slope and soil type on each farm, rather than wholesale purchases of farms to be fully converted to forestry investments. This is likely to help achieve a 'right tree right place right purpose' outcome.

• reducing demand by limiting how many forestry unit's non-forestry participants can surrender

**Fully support.** This would reduce the ability for companies to offset their emissions through the ETS and increase the onus on emissions producers to reduce their emissions at source.

requiring them to pay an additional fee when surrendering forestry units

Fully support. This would increase the economic incentive to reduce gross emissions at source, rather than offset.

• reducing the rate at which units can be earned by exotic forest

Agree that this would reduce the proportion of new exotic forests as compared to native.

**Recommend** that the price difference would need to be significant enough that lifecycle economic analysis of native and exotic forests become comparable.

 limiting the overall area of forest that can be registered in the NZ ETS each year, or otherwise amending the eligibility criteria.

#### When assessing options Government should consider...

**Consider** the impacts of land use changes on local economies including the social and cultural impacts. Particularly within rural communities with low populations. Schools and other services are a vital link to the ongoing viability of these communities and require minimum numbers to remain open.

Consider the need to preserve food production from our highly productive agricultural soils.

Consider economic return per hectare available to landowners.

**Recommend** developing and presenting information to landowners on deriving value from permanent stands of native forest – e.g., honey production, medicinal harvesting for high value goods, and sustainable forestry practises for high value native timber.

<sup>&</sup>lt;sup>4</sup> (Fairweather, Butcher, & Scott-Kennel, 2000)

# What unintended consequences do we need to consider to ensure we do not unnecessarily restrict forest planting?

#### 32. Are there any other views you wish to share in relation to emissions pricing?

**Recommend** making provision within the ETS to maximise the sequestration and storage potential from our forests. This may require a chain of custody or verified end use type of system and allow entities to claim back NZU's based on this evidence. Long-term storage applications are most notable in building materials.

#### Planning

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

**Fully support** introducing a requirement for Crown agencies, entities, and Crown-owned companies to include climate change into their decision-making processes.

**Recommend** the Government consider a relative skills or knowledge shortage in this area, especially when requiring regional expertise and knowledge. Recommend facilitating an initiative that develops regional capacity for this type of work through education and empowerment.

**Support** the development of an emissions measurement tool for urban development decisions (factoring in both enabled and embodied emissions).

**Support** reform of the Land Transport Management Act, New Zealand Building Code and Building Act, and Local Government Act.

**Recommend** that in enacting these reforms, legislative barriers to renewable energy generation are significantly decreased. This could be achieved through the development of regional energy strategies that inform and link to the national energy strategy. These strategies should include regional spatial analysis to determine likely locations for renewable energy generation and allow for these to be a permitted activity within regional plans – especially in the context of landscape areas that are already significantly modified. This would fast track renewable generation by reducing consenting costs and provide the right setting to account for future demand.

**Recommend** requiring the installation of real time monitoring equipment as a part of the resource consent conditions when reviewing or granting new land intensification and water extraction consents. Increased remote monitoring can greatly reduce council compliance monitoring costs while also providing better data to decision makers.

**Recommend** making provisions in the resource consent process that recreation reserves required as part of subdivisions should be planted to provide sequestration, carbon storage and other co-benefits.

**Recommend** amending policy to allow planting for carbon sequestration purposes to take place on crown owned public conservation land. Including that administered by DoC, and that owned and administered by local and regional councils.

34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

**Consider** that more intensive urban populations will require significant upgrades to many of our infrastructure services, as many are not fit for purpose even under current settings – e.g., transport, stormwater, and wastewater services.

#### 35. Are there any other views you wish to share in relation to planning?

#### Research, science, and innovation

- 36. What are the big challenges, particularly around technology, that a mission-based approach could help solve?
- Low emission heavy vehicles, air, sea, rail, and other off-road travel.
- Efficient electricity distribution.
- Efficient appliances.

- Lower emission foods and agriculture.
- Developing onshore resource recovery processes and processing facilities.
- 37. How can the research, science, and innovation system better support sectors such as energy, waste, or hard-to-abate industries?
- 38. What opportunities are there in areas where Aotearoa has a unique global advantage in lowemissions abatement?

Satellite monitoring ground station services.

- 39. How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?
- 40. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?
- 41. Are there any other views you wish to share in relation to research, science and innovation?

#### **Behaviour change**

#### 42. What information, tools or forums would encourage you to take greater action on climate change?

Recommend ensuring that positive action, trends, and news are widely and frequently reported in news media. Hope and motivation is easily lost in the face of predominantly bad news. This applies to local, regional, national, and global events and news media outlets.

Recommend developing and implementing a labelling system for consumer goods to show relative emissions ratings between products (e.g., in supermarkets (CO2e/100g) and on other consumer goods (cars, electronics, clothes etc)).

- 43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?
  - Scientifically derived based messages and information sources.
  - Information from non-commercial entities.
  - Face to face conversations with people you know or already have strong relationships with e.g., business advisors, accountants, bankers etc.
- 44. Are there other views you wish to share in relation to behaviour change?

Great South suggest Government considers using regional and local agencies to facilitate and administer funding to support behaviour change initiatives within their jurisdictions.

#### Moving Aotearoa to a circular economy

45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

2030

- High priority product stewardship schemes are developed and operational providing insights for further expansion of product stewardship schemes across other sectors of the economy.
- Current waste streams are better separated, and value retained or gained where it was not previously utilised.
- Resource recovery of organic materials through biological systems and processes are initiated as a priority (food waste to energy, methane gas capture from dairy effluent).
- Consideration of having packaging materials transitioned to organically based materials.
- Greater emphasis, rewards or incentives are offered for products produced from recycled materials.

• Investment focus and support from the Science, Research, and Innovation system to develop the engineering-based parts of the resource recovery system such as recovery facilities and associated processing methods.

#### 2040

Product stewardship: by 2040, regulation has been introduced so that production and sales of linear supply chain and life cycle products in New Zealand is not possible. Companies must either operate their own repurposing facilities or secure external contracts to undertake the work. The cost of this is shouldered by companies creating the waste, instead of the public (through rates) or the Government. It is hoped this will stimulate accelerated designing out of waste from the system.

#### 2050

By 2050 all recycling and repurposing is carried out within New Zealand.

- 46. How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?
  - Biofuel production from woody biomass and industry by-products.
  - Opportunities to reduce input costs and increase value of primary products from New Zealand.
  - Opportunities to increase soil health and water quality.
- 47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?

Circular economy strategy should include:

- Identification of key resource production, use, and recovery groups being ranked by impact to determine which sectors or parts of the system require the most support or immediate action.
- Regulations for imported products/product importers, and onshore product producers.
- How to ensure regulation will not result in companies avoiding New Zealand in favour of markets with less stringent access requirements.
- Product stewardship strategy outlining how all companies will be required to account for the waste designed into their products.
- Accelerator programs for any start-up ventures based around resource recovery/re-use.
- What training, support and resources will be made available to businesses to assist them to upskill in the areas of sustainable supply chain management, packaging and designing for circular resource use.
- How Government plans to develop capacity within New Zealand to re-process materials onshore.

Agree that the bioeconomy should be a part of the circular economy strategy.

48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

#### Support the suite of proposals made.

**Strongly support** Government action to accelerate the bioenergy market. Establishing long-term agreements between feedstock producers, intermediaries, and end users, assisting in the development of a platform to help match buyers and sellers, and providing information to the market.

Funding more circular economy innovation and economic development opportunities as they arise.

Ensuring adequate bioeconomy resources to support these transitions (low-emission and circular bioeconomy).

Data gathering and gap-analysis.

- 49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?
  - Efficiency both economic and energy related regarding transport, sorting, cleaning, and re-processing used materials.

- Resistance from those heavily reliant on a linear supply chain business model.
- Health and safety regulations that rigidly favour single use and plastic for food packaging, PPE, and medical services.
- Product design and construction methods that have regard only to functionality, and efficiency to produce and cost.
- Consumer culture cost driven purchasing decisions, desiring new over old, throw away rather than fix.
- Keeping up with increased demand for bio-resources for the new bioeconomy while also retaining landscape character, and intrinsic values of natural spaces.
- Lack of onshore processing capability.
- 50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?
- 51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

**Strongly support** the necessity for adequate data and reporting to understand and work within real planetary boundaries as much as possible. This would include assessments of resource availability, extraction rates and recirculation rates as mentioned in the 'circularity gap' country scan report.

Strongly suggest that the waste strategy should not be separate from the circular/bioeconomy strategy.

**Strongly suggest** that a circular economy approach be applied to the industrial cycle of products.

#### Transitioning key sectors

#### Transport

52. Do you support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

#### Strongly support.

Strongly recommend increasing the focus on avoiding travel related emissions that are not only influenced or related to urban form, but reasons that people travel -e.g., shopping, accessing services, working and recreation. Initiatives that reduce the need to travel or use cars for these reasons should be explored. For example:

- Work: Incentives and initiatives encouraging companies to adopt working from home policies that will have a large impact on commuter travel. Encourage companies to invest in desks in local co-working spaces that are distributed closer to where people live.
- **Grocery shopping:** Initiatives to largely increase the share of online grocery ordering, or density/permeation of suburban areas with local fresh food and vegetable shopping opportunities like many European countries where large supermarkets do not overly dominate the grocery shopping sector.
- **DIY and garden supplies:** Supporting an increase of online ordering and delivery options for large, heavy, awkward, or dirty goods that could not be transported via public or active transport modes.
- Services: Increase capacity for services to be delivered online.

**Strongly recommend** adequate consideration is given to first and last mile travel connectivity within the public transport network upgrades. It should be ensured that users are able to seamlessly link the public transport system with the active transport networks – this looks like **significantly increasing the capacity for people to take their micro mobility units with them for the ride.** 

**Recommend** considering that if active/public transport is to take the place of current transport modes (i.e., private cars), that these new transport choices must cater to, enable, and replace the functions that current Kiwi car drivers use their private cars for.

For example:

- Making it more accessible and socially acceptable to do your grocery shopping via the bus/train by allocating adequate stowing space for luggage/bags and potentially even insulated drawers for chilled items.
- Making the public transport system more accommodating and friendly towards those wanting to take tools, equipment, or other bulky items for business (tradespeople) or recreational activity such as snow sports equipment, surf boards, bikes.
- Allocating funding to enable and reduce barriers (cost) to fitting bikes and e-bikes with carrying capacity (panniers, trays, trailers) especially for low-income demographics. This could be achieved through recycling and re-purposing wherever possible.
- Ensuring that public transport is accessible to mobility compromised individuals including the elderly. At a minimum this would require reduced step heights and or ramp access to public transport.

**Recommend** developing a strategy that identifies and addresses gaps left by the public/active transport system, taking a Kiwi specific lifestyle model (as discussed above), and thereby **reducing the need to own a private vehicle at all when living in urban centres.** 

We **support** the goal to *"Require further roadway expansion and new highways to be consistent with climate change targets"* but would like to see clearer commitments and guidance as to what projects would meet these criteria.

Recommend that the government similarly restrict new parking spaces.

53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

Support the proposed target.

Support all other proposed actions.

54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

Support the proposed target.

**Recommend** also investigating and supporting infrastructure for battery swapping as opposed to fast charging for zero emission heavy vehicles.

**Recommend** that government address logistical inefficiencies and associated emissions in the rural trucking freight system by investing in upgrades to weight restricted bridges.

Support all other proposed actions.

55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

Support the proposed target and stepwise increases proposed for 2023-2025.

Strongly support the provision of support to encourage and secure domestic production of biofuels.

**Strongly support** working with industry to ensure sustainable biofuels and adequate supply will be available. Support a preference for woody biomass and waste biomass sources as opposed to biofuel sources that would be likely to displace food producing land uses.

**Recommend** supporting infrastructure provision not only in the form of public fast charging facilities, but also for slow chargers in residential properties.

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

Support the proposed target.

Support actions to increase EV uptake.

57. Are there any other views you wish to share in relation to transport?

**Support** taking a place-based approach to reducing reliance on vehicles, while ensuring this is in line with national targets.

#### **Energy and industry**

#### Energy strategy

58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

#### **Priorities**

Energy efficiency:

- Great South recommend an approach that focuses on reducing energy use and losses is adopted.
- Great South recommend addressing the current inefficiencies and losses through the power network particularly regarding harmonics and power factor.
- Future proofing the power network infrastructure to ensure that it will be adequate with respect to future demands.
- Ensuring that asset management plans contemplate development ahead of demand and provide for agility in the system to enable a quick response to challenges associated with decarbonisation.
- Taking an approach that focuses on thermal efficiency to make the best use of fuel and energy sources.
- Demand management solutions in areas such as thermal efficiency in our building stock, lighting, transportation energy intensity, and peak demand management all of which may help in reducing the frequency and scale of reliance on thermal fossil fuels in the electricity system.

Waste to energy:

• Great South recommend prioritising the capture of methane from food waste, dairy effluent, metropolitan and industrial waste with the energy captured used within the process.

Fuel switching:

- Reducing emissions without causing the need to replace existing technology/plant. For example fuel switching and converting existing assets.
- Securing sustainable and affordable biofuel and hydrogen development initiatives and associated processing capability within New Zealand.

Phasing out coal:

- Consideration is given to existing fossil fuel boilers in residential areas are not re-consented.
- Consideration is given to not having coal available for residential purchase within the next five years.
- Consideration is given to the phasing out of coal in all applications.

Fiscally related impact assessments:

• Ensuring that any new energy projects take lifecycle emissions and energy return on investment into consideration.

Distributed renewable grid:

- Increasing renewables capacity particularly of wind and solar, and prioritising new developments of a distributed form. These developments do not contribute to ongoing landscape modification and come at no extra cost to the natural environment.
- Considerations to enable, accelerate and best utilise a distributed grid.

#### Challenges

- Potential for early movers to move in the wrong direction (from a systems perspective) and lock in less-thanoptimal technology investments regarding energy choices.
- Hard to abate industries and processes.
- Optimising and minimising costs associated with a distributed grid.
- Biofuel supply sources, processing infrastructure, volume, and lead time to come online.

- Costs associated with operating and maintaining existing infrastructure for fossil fuels, while also building and maintaining new infrastructure projects e.g., hydrogen fuel, EV charging stations.
- Securing stable and affordable electricity as the energy mix for households and businesses become increasingly less diverse and dependent on electricity therefore heightening exposure to price fluctuations.
- Public sentiment regarding new energy developments.

#### **Opportunities**

- Utilising smart grid technology to allow our grid and our people to live more in tune with natural energy rhythms.
- Capacity that could be realised through distributed grid projects (solar panels on every roof).
- Resilience that could be afforded to the system by these distributed systems.
- Demand reduction interventions transport, urban form, efficiency gains in lighting, appliances and other technology and building thermal efficiency all playing a role to realise these.
- Fuel independence and reduced costs for households and businesses with increases in efficiency and accelerated uptake of distributed energy generation.
- Waste to energy projects.
- Fuel switching and utilising existing technology and infrastructure with lower emissions from fuels, while avoiding embodied emissions from technology scrapping and building new.
- Alternative fuel industry (hydrogen and biofuel) New Zealand realising fuel independence, and potentially becoming a fuel exporter.

#### 59. What areas require clear signalling to set a pathway for transition?

- The role of each fuel for specific applications on the energy consumption side.
- Transitioning away from coal and what the alternatives are.
- The role of hydrogen.
- Industry specific pathways.

#### Setting targets for the energy system

# 60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

**Recommend** adopting a pragmatic and realistic target – one that doesn't commit us to unnecessary spending or outlays that may impact on our ability to deliver overall emissions targets. Considering ROI or marginal abatement costs when embarking on any emissions reduction project at a national level. As per the Climate Change Commission's advice – recommend setting a broader, system-wide target for renewable energy would signal the scale of emissions reductions required across the whole energy system and encourage investment without locking in a prescribed pathway.

**Support** the targets recommended by the Climate Change Commission - 50 per cent of all energy consumed coming from renewable sources by 2035, and a goal of 95–98 per cent renewable electricity by 2030.

**Support** accelerated development of hydrogen opportunities that could act as a dry year energy storage solution to phase out baseload fossil energy generation and provide export opportunities and fuel independence for New Zealand.

**Support** a significant increase in the proportion of renewable generation as this will be crucial to enable industries in New Zealand to capitalise on strong sustainability claims. For example – the export of *green* hydrogen.

#### Phasing out fossil gas while maintaining consumer wellbeing and security of supply

61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

#### Decarbonising the industry sector

62. How can work under way to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

Support including plans to decarbonise industry under the newly proposed National Energy Strategy.

63. Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?

Addressing current data gaps on New Zealand's energy use and associated emissions through an Energy and Emissions Reporting scheme

64. In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold?

Yes, commercial and transport companies should be included.

65. We have identified a proposed threshold of 1 kt CO<sub>2</sub>e for large stationary energy users including commercial entities. In your view, is this proposed threshold reasonable and aligned with the Government's intention to meet emissions budgets and ensure an equitable transition?

Yes.

66. In your view, what is an appropriate threshold for other large energy users such as transport companies?

As proposed for large stationary energy users - 1 kt CO<sub>2</sub>e.

67. Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and Emissions Reporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed.

Supporting development and use of low-emissions fuels

68. What level of support could or should Government provide for development of low-emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

**Recommend** that Government take an active role in providing additional support for the development of bioenergy and hydrogen resources as these are crucial to our energy sector through this low emission transition and into the future.

**Hydrogen** presents a significant and multi-faceted opportunity for the energy sector. With the closure of Tiwai aluminium smelter signalled for 2024, New Zealand in a lightly loaded grid situation. A lightly loaded grid is less capable of adapting to the intermittent nature of energy generation associated with renewables such as wind and solar. The presence of large industrial energy users enables this excess energy to be used in a productive way, while also reducing demand during peak periods to ensure power stability. Without such users, New Zealand may find itself in a situation where inertia devices may be required to dissipate excess energy, at no productive use to the economy. Hydrogen production could support a more heavily loaded grid situation. Hydrogen produced could provide energy storage, export income, decarbonisation fuel for high temperature gas applications and in heavy transport applications.

We therefore **strongly support** significant investment for hydrogen development in New Zealand and have identified Southland as a very well-suited location for a green hydrogen production facility.

Collating and publishing data on existing biomass resource supply and demand to identify potential regional supply chains.

Developing policies that ensure adequate resource within the bioeconomy to support emissions reductions targets.

Recommend the Government takes an active role in market facilitation of bioenergy by helping establish long-term agreements between feedstock producers, intermediaries, and end users.

Recommend the Government assists in developing a platform to help match buyers and sellers.

Recommend the Government takes an active role in providing information to the market.

69. Are there any other views you wish to share in relation to energy?

#### **Building and construction**

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

Strongly support this initiative.

**Support** the roll out of such a scheme to all buildings as presented under *Improving energy efficiency* potential policies and measures for buildings and construction.

Support expanding eligibility of the Warmer Kiwi Homes programme.

Support subsidies or low- or no-interest lending for energy efficiency improvements to existing buildings.

71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

Regulations around planning and urban form considerations.

Introduce standards for electrical appliances and lighting. Provide incentives to exchange inefficient or obsolete technology and introduce more stringent energy performance standards for fitting out new buildings.

Support the building and construction sector to identify and quantify comparative emissions intensity of different building material choices over the whole of asset life.

Support and/or scale up existing waste reduction initiatives for the construction sector.

Introduce legal liability for failing to take the appropriate duty of care in respect to waste management through application of waste hierarchy principles. The UK provides an example of this type of legislation and the associated success in reducing construction and demolition waste.

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

Support the mechanism of an emissions cap.

Support a clearly signalled move away from fossil gas.

**Recommend** that the role of low emission gasses is supported for New Zealand's future energy mix, especially as current infrastructure networks may be easily repurposed to supply these alternatives. In this respect, we support the targets for phasing out fossil gas infrastructure and **support** the continued maintenance and expansion of infrastructure to supply low emissions gasses.

**Recommend** that Government could best support this transition by accelerating development of low emission gas sources in New Zealand, clearly signalling price forecasts for the phase out stages of fossil gas, and the likely prices of renewable gasses. This will inform choices for heating and cooking systems to ensure that those most appropriately suited to the new energy mix and associated pricing are selected during new builds or renovations.

# 73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) **in boilers used for space and water heating in commercial buildings?**

**Recommend** modelling and clearly signalling price forecasts for different fuel choices.

**Recommend** signalling a phase out of fossil fuelled building heating by granting no new consents for fossil fuelled boilers once they reach the end of their useful life.

**Recommend** that alongside pricing forecasts, relative emissions factors of fuels are also widely distributed to raise awareness and clearly signal a preference order among fuels, both fossil and renewable.

**Recommend** developing a clear standard for emissions performance in buildings that new buildings or retrofits must meet or exceed.

74. Do you believe that the Government's policies and proposed actions to reduce building-related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

As shown in the recent "Southland Housing Situation Analysis" report completed by Great South in October 2021, the cost of building is beginning to put building and home ownership out of reach of the average New Zealander. The high cost of building supplies should be noted. It is our view that Government need to ensure competitiveness in this sector.

While increasing requirements both in the design and build phase will increase building costs further, this could be alleviated by ensuring any processes or mechanisms put in place are streamlined and by providing guidance and clear pathways to achieve the requirements. This may be achieved through advocacy for specific building materials and methods. For example, the use of structural insulated panels (SIPs) reduces build time, thereby increasing efficiency and reducing cost, while meeting high insulation and low emission standards.

Government could also assist new home builders to overcome aversion to upfront costs by helping them to understand associated cost savings and ROI from low emission, efficient building designs.

**Recommend** that regulation be considered to ensure the financial and health interests of prospective buyers or tenants are adequately considered and protected to ensure equitable outcomes between renters, and owner occupiers who build their own home, or buy it from someone else.

Strongly support proposed actions under financial and other incentives to encourage lower emissions buildings.

- 75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?
- 76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

Support the proposed actions.

**Support** proposed actions to drive behaviour change in the construction industry.

77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

Support all proposals under the contestable innovation fund section.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

**Recommend** that realising significant waste minimisation and circularity will require additional levers such as legislative action and procurement signalling from Government.

**Consider** modelling our actions based on those adopted by the UK, who currently achieve a recovery rate of over 80% for construction waste<sup>5</sup>. The waste duty of care code of practice<sup>6</sup> puts legal environmental responsibility onto

<sup>&</sup>lt;sup>5</sup> (Gálvez-Martos & Istrate, 2020)

<sup>&</sup>lt;sup>6</sup> (United Kingdom Government, 2016)

contractors within the construction waste system in a similar manner to how responsibility for health and safety described in New Zealand legislation.

79. What should the Government take into account in exploring how to encourage low-emissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

As per comments in the behaviour change section.

**Strongly support** introduction of low interest funding models to help overcome the challenge of upfront capital costs that many home buyers and builders are faced with, especially towards the aim of changing behaviour away from a 'disposable' housing stock mentality and building for greater longevity.

Some local council bodies already have a voluntary targeted rates scheme in place to support their region in realising the benefits of low emissions and more efficient buildings.

**Recommend** developing and maintaining clear guidance as to what standards need to be met to be eligible for funding.

**Strongly support** the introduction of a scheme like the Exemplary Buildings programme in Brussels that encourages continuous innovation and improvement through a prestigious and competitive programme.

80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

**Recommend** developing a workforce strategy in tandem to identifying and developing alternative low-emission building models and materials.

81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

As per comments provided to question 74.

**Recommend** that regulation of the property development industry must be put in place to ensure the financial and health interests of prospective buyers or tenants are adequately considered and protected. This will ensure equitable outcomes between renters, and owner occupiers who build their own home, or those who buy it from someone else.

**Strongly support** proposed financial measures and incentives that will assist all New Zealanders to access and reap the benefits of healthier, warmer, drier, and more efficient homes – even if they do not have the upfront capital required.

# 82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

**Strongly support** initiatives and policy changes to remove barriers to lower emissions building products, ways of building and recycling/reusing building products and materials.

**Recommend** that building and construction in New Zealand should prioritise a move away from high emissions materials and construction methods associated with concrete and steel. A move towards structural wood products will significantly increase sequestration and storage of carbon and these ductile structures are also well suited to New Zealand's seismic setting.

#### Agriculture

83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?

**Recommend** targeted upskilling opportunities for current farm advisory services such as banking, law, and accounting. These firms often have longstanding and trusted advisory relationships with agricultural businesses.

**Recommend** continuing to support and partner with existing local catchment groups and industry bodies to provide advisory/extension services.

- a. How could the Government support the specific needs of Māori-collective land owners?
- 84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

Government could work with industry to create a voluntary branding/marketing campaign for zero/low carbon certified products and farms.

Low-interest loans and other financial assistance or incentives for proven emissions reductions activities should be made available. Accelerating the installation of efficient anaerobic digestors should be a priority. Many farmers in the Southland region are interested in this technology, but the upfront capital costs represent a real barrier. On-farm anaerobic digestors can provide multiple benefits including gas capture and burning to reduce the emissions intensity and using that captured gas as an energy source for electricity and heating needs on-farm.

# 85. What research and development on mitigations should Government and the sector be supporting?

Most promising technologies:

- Selective breeding for sheep, followed by cattle.
- Effluent management and biogas capture.
- Methane vaccines.
- 86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Government could work with industry to create a voluntary branding/marketing campaign for zero/low carbon certified products and farms.

Develop transparent criteria and standards to assist in this process.

87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

Great South have undertaken numerous projects in the applied science space to assist farmers and landowners with understanding their soil profile, topographic profile of their farm, and on-farm energy efficiencies, to guide decision making with respect to transitioning grassland to crops, riparian planting of water ways, planting of trees on high slope areas, to yield results that not only ensure environmental sustainability but provide economic stability.

Great South recommends Government seeks a similar method for providing tools and information to support decision making on land use.

#### 88. Are there any other views you wish to share in relation to agriculture?

#### Waste

89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

Support the proposed target.

#### Support the approach to:

- require LFG capture for Class 1 landfills by 2026
- ban organic matter from Class 2-5 landfills by 2030
- and banning key organic materials from Class 1 landfills by 2030.

As per q.78 **recommend** addressing the potential for relatively cheap Class 2–5 landfill disposal to undermine reduction and resource recovery through enacting legislation directly covering this type of waste.

90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?

**Consider** investment should focus on processing capability and in delivering kerbside collection systems that enables separation at source.

**Support** funding and initiatives that assist households and commercial sector food businesses to reduce their food waste.

Consider providing clear and simple waste separation systems as these would aid behaviour change.

91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

**Consider** providing support to enable independent household, community, or business diversion programmes. For example, composting and worm farming.

**Support** the notion that increased costs associated with landfill disposal are likely to be offset by the reduction in waste sent to landfill – as supported by new infrastructure and diversion schemes.

92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

Fully support.

93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

Fully support.

94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

Fully support.

95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

Fully support.

96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?

Yes - fully support.

97. Do you think that the proposals outlined in this document should also extend to farm dumps?

Support applying the principles in the proposed approach to farms.

Support regulatory and behaviour change initiatives to phase out the practise of burning waste on farms.

98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?

Opportunities for farmers to co-locate facilities with neighbouring properties to share costs and benefits of scale should be explored and encouraged.

Support farmers to upskill and understand the value they may be able to retain from their waste streams – particularly focusing on practical, easy, and effective options that return enough value to incentivise and warrant action.

99. What other options could significantly reduce landfill waste emissions across Aotearoa?

**Recommend** extending gas capture requirements to include metropolitan and industrial effluent infrastructure projects.

#### **F**-gases

100. Do you think it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable, or not?

Yes, **support** that a more ambitious target is within reach.

101. One proposal is to extend the import phase down to finished products containing high-global warming potential HFCs. What impact would this have on you or your business?

102. What are your views on restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available?

Fully support.

103. What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?

Fully support.

- 104. Do you have any thoughts on alternatives to HFC refrigerants Aotearoa should utilise (eg, hydrofluoroolefins or natural refrigerants)?
- 105. Can you suggest ways to reduce refrigerant emissions, in combination with other aspects of heating and cooling design, such as energy efficiency and building design?

Strongly support energy efficiency considerations through design.

#### Forestry

106. Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

Support to some extent.

Ensure that forestry sequestration is not used as an excuse for slow and ineffective action in gross emissions reductions.

Ideally support the use of forestry sequestration to increase our emissions reduction ambition and position New Zealand as a desirable, leading, low-emission nation.

107. What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?

Consider the spatial distribution of employment opportunities when siting new processing sites. Preferentially site in an accessible location to affected communities.

Provide transitional support and training opportunities for employees of displaced sectors.

108. What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

Investigation into new propagation/seeding techniques such as drone seeding.

Offer ETS incentives - as per comments in the ETS section.

109. What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

**Strongly support** that Government encourage continuous canopy forest systems across all forest systems owing to considerable benefits in the social, environmental, and cultural spheres.

Support encouraging greater diversity in our forestry systems and species.

**Support** greater uptake of mixed species, long rotation exotic stands.

Support development of native continuous canopy harvest forestry.

**Support** continuous canopy harvest forestry over permanent no-harvest exotic sequestration forests – as per comments in the ETS section. Harvesting for long-term end uses will enable us to realise greater sequestration rates per hectare than would be afforded by permanent forests, as once these reach maturity, sequestration rates plateau.

a. Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?

Consideration should be given to the establishment of new permanent forestry ventures with checks put in place to ensure that highly productive arable or agricultural land is not unnecessarily being converted to permanent forestry and maintaining 'right tree right place right purpose'.

**Strongly support** policies that discourage whole-farm conversion and instead support afforestation plots that are integrated on farms and/or with other land uses.

b. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

Policies that consider 'right tree right place', biosecurity considerations (for exotic species prone to wilding), sustainable management (a move away from clear felling), employment opportunities and adding value through the whole supply chain.

110. If we used more wood and wood residues from our forests to replace high emitting products and energy sources, would you support more afforestation? Why or why not?

Support to a certain extent.

Recommend the profitability and productivity of land use decisions be kept in view and ensuring ongoing diversity in our land use mix i.e., not becoming overly reliant on forestry.

111. What role do you think should be played by:

a. central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment?

**Suggest** Government play a role in ensuring highly productive land does not get locked away permanently under forestry land covenant legislation.

**Strongly suggest** the Government should play a role in regulating whole-farm conversion to forest, as this is likely to work against optimising our land use mix.

**Strongly suggest** the Government take a role in regulating the trend for international investments in carbon sequestration driving the expansion of permanent exotic plantations.

b. the private sector in influencing the location and scale of afforestation?

The private sector will potentially play a crucial role in driving profitability from the land use transition with locating forests on cheaper land, or land where access to markets is better, and determining the most cost-effective harvesting methods, species, and forest systems.

112. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

**Strongly support** increased innovation and research for remote operation, technology-linked pest control methods. For example, self-re-setting traps, spatial data, and alert systems to reduce the need to manually visit traps to check their status.

- 113. From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?
- 114. Are there any other views you wish to share in relation to forestry?

# Southland Housing Situation Analysis

October 2021

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Southland Regional Development Agency

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## Introduction

This report updates analyses prepared by Venture Southland in August 2018. It provides an overview of the current and anticipated housing growth challenges for the Southland Region.

The Southland Regional Development Strategy sets a target of growing the regional population by 10,000 people to live in Southland. However, consultation throughout the development of the Strategy recognized the pressures such a growth would impose on the limited housing stock available in the region.

This report considers the critical challenge of building stock availability in Southland, and the role of the tourism (accommodation), rental and property market as key drivers of availability. This report is a step toward undertaking a more in-depth supply and demand review. Through this review, Great South has accessed the following data sources:

- Building consenting data from
  - o Gore District Council
  - Invercargill City Council
  - Southland District Council
  - o Statistics New Zealand
- Uptake of peer-to-peer accommodation providers, including
  - Air DNA (Airbnb properties)
  - HolidayHouse.co.nz
- House price and rental price from,
  - Tenancy Services
  - QV House Prices
  - o Homes.co.nz
- Housing reviews commissioned by the New Zealand Government
  - Emergency housing data from:
    - Ministry of Social Development
    - Ministry of Housing and Urban Development.

# **Drivers of Housing Demand**

Through the 2018 report, the following drivers of demand for housing were identified:

| Driver of Demand (2018)                             | 2021 Update  |
|---|--|
| Population growth                                   | Data presented by Infometrics (2021), estimates that the population for Southland has grown to 104,400.<br>Considering this growth in population and the estimated current housing stock, we believe Southland is currently <b>1,659 houses short</b> to effectively house our population.   |
| Demographic changes,<br>including ageing population | It is proposed that an ageing population will look for smaller, warmer property.   |
|   | Currently over half of the housing stock in Southland (52.4%) is three-bedroom homes (Stats NZ 2020). Yet demographic forecasts by Statistics New Zealand show a strong growth in the older demographics across Southland, and within Gore District, where the 75–80 and 81–84 age groups are likely to be the largest portions of the population by 2043. |
|   | As such, future analysis should consider how housing stock<br>is suited for this demographic, noting the limited number of<br>'retirement' villages being constructed (Figure 2).  |

| Ageing housing stock   | As mentioned above, there is an undersupply of property so<br>a reluctance to replace building stock. Hence, the continued<br>increase in housing stock age and deteriorating condition<br>needs to be carefully considered. Limited data are available<br>to measure this materially.  |
|--|---|
| Increased tourism growth and seasonality of this.                    | Wide reaching impacts of the COVID-19 pandemic have<br>provided short term relief from the pressures of tourism<br>growth on sub regional housing stock. This effect has not<br>been consistent across the region, with destinations such<br>as Rakiura Stewart Island experiencing little reduction in<br>tourism pressure. However, where there has been a<br>downturn in tourism, there is less demand for staff<br>accommodation, and some short-term rentals are being<br>converted to longer term rentals. We expect this to be short<br>lived. |
| Growth of Airbnb reducing<br>availability of rental properties       | <ul> <li>Prior to Covid-19, growth in Airbnb and other platforms had increased significantly across all the sub regional areas we monitor. This was likely driven by two factors: <ul> <li>Reduction in rental property yields and higher returns through Airbnb</li> <li>Strong tourism market</li> </ul> </li> <li>More recently, across the region, the number properties used for Airbnb has decreased by 233 properties, or 22%. This reduction is like levels seen in late 2018. A similar</li> </ul>   |
| Lifestyle and holiday house<br>development                           | reduction can be seen on HolidayHouses.co.nz data.<br>We have limited measures available to understand the<br>regional distribution of holiday houses and lifestyle<br>development. However, we are seeing increasing numbers<br>of commuters into main urban areas from areas with high<br>proportions of holiday houses, e.g., Riverton and Colac<br>Bay, due to housing shortages in urban areas such as<br>Invercargill.  |
| Business growth of large<br>companies and future<br>workforce demand | Ongoing workforce planning is being undertaken to support<br>the development of large industry throughout Southland.<br>This could include data storage facilities and hydrogen<br>generation. The current undersupply of property in<br>Southland means that access to property (rental or<br>purchase) will continue to be a constraining factor for<br>growth.   |
| Emergency and social housing   | Since the previous report in 2018, we have seen a decrease of 4% or 15 homes in the number of public house tenancies across the Southland Region. At the same time, an increase in demand has jumped from 59 on the Housing Register in 2018 to 202 in 2021 – an increase of 242%.  |

These factors have been the basis of this report. We provide further evidence below for the likely interplay between these factors, which has ultimately led to a significant under supply of property in the Southland region.

## **Current Demand**

Demand for property in Southland is driven by three factors:

- 1. Migration
- 2. Servicing seasonal employment in large industries
- 3. Tourism and short-term accommodation requirements

#### **Baseline Assumptions**

Statistics New Zealand provides a count of occupied dwellings each census night. We have considered the ratio of the number of dwelling to population at every census since 2001. This relationship is shown in Figure 1 below.

Figure one shows that the likely rate of building and rate of population growth were approximately equal in 2001, 2006 and 2013. Since then, the population has grown exponentially, while occupied dwellings have grown at a net increase of 237 dwellings per year.





| Census | Number of<br>Occupied<br>Dwellings | Population | People Per<br>Dwelling |
|--------|------------------------------------|------------|------------------------|
| 2001   | 35,544                             | 93,300     | 2.62                   |
| 2006   | 36,084                             | 93,200     | 2.58                   |
| 2013   | 38,145                             | 96,000     | 2.52                   |
| 2018   | 39,330                             | 100,500    | 2.56                   |

Table 1: People per dwelling (Statistics New Zealand)

Building off the assumption that in 2013 housing stock was an appropriate level to house the region's population (i.e., rate of build was equal to rate of population growth), we consider the period between 2013 and 2021, as follows:

- An increase in population of 8,400 people from 96,000 to 104,400 (as reported by Infometrics)
- To service this, 3,333 houses, need to be constructed assuming 2.52 people per dwelling (2013 ratio).
- Between 2013 and 2018 census a net increase of 1,185 houses has been shown by census data. If we assume the constant rate of net growth stands at 237 houses per year, it is estimated that a further 474 houses have been fully constructed. Therefore 1,674 houses have been constructed.
- At the time of writing there is therefore a calculated shortfall of 1,659 houses in Southland.

It is expected that immigration will continue to grow throughout Southland. This will be driven by the return of ex-patriate New Zealanders, the ability for staff to work 'remotely' and housing demand and pricing in other major centres.

#### Industries and seasonal employment

Growth targets of major industries and workforce requirements of industries coupled with the relatively low unemployment rate (3.3% Q2 2021) of the region, means that workforce planning must include how effective housing of that workforce will be achieved.

This issue particularly applies in industries which require seasonal employment, such as dairy and tourism. In the case of tourism, limitations in staff housing have had a slight reprieve, with the impacts of COVID19 reducing the numbers of staff and additional holiday/Airbnb properties becoming available on the rental market<sup>1</sup>. Destinations such as Rakiura Stewart Island have not had this same relief, with similar numbers of properties listed on Airbnb as in January 2020 and significant shortages in staff accommodation as reported through the media (Rowe, 2020).

### Current Supply

Data sourced from Statistics New Zealand and the three District Councils provides some insights into the number of residential dwellings consented for construction. It is important to note that these estimates are consented work as opposed to constructed dwellings.

| Year End<br>May | Southland District<br>(SDC) | Gore District<br>(GDC) | Invercargill City<br>(ICC) | Southland Region<br>(Stats NZ) |
|-----------------|-----------------------------|------------------------|----------------------------|--------------------------------|
| 2018            | 169                         | 28                     | 37ª                        | 257                            |
| 2019            | 176                         | 41                     | 16 <sup>b</sup>            | 280                            |
| 2020            | 204                         | 26                     | No data                    | 386                            |
| 2021            | 167                         | 39                     | 77c                        | 348 <sup>d</sup>               |

| Tuble 2. Her residential properties consented across the obathana region | Table 2: New residential | properties consented across | the Southland Region |
|--|--------------------------|-----------------------------|----------------------|
|--|--------------------------|-----------------------------|----------------------|

Interpretation Notes:

Dataset currently incomplete, containing 3 months<sup>a</sup>, 1 month<sup>b,d</sup> and 5 months<sup>c</sup> of data respectively

As discussed in the above section, net rate of growth of 'occupied dwellings' is 237 dwellings per year (as shown in census data). When this is compared with the total number of consented properties over this same time period (Table 2, Figure 2) it shows that approximately 75% of buildings are being built new, while 25% are replacing existing building stock, or not being constructed. Of note, Southland, however, had the second lowest ratio of residential building consents to people, at 3.5 consents per 1,000 population (Stats NZ, 2020).



Figure 2: Consented properties, Southland Region (Statistics New Zealand)

<sup>1</sup> Our references show that just over 200 Airbnb properties are no longer listed on Airbnb for Southland, when compared with January 2020

## Property value, price, ownership and quality

Southland has followed national trends in property prices, with the median property value as reported by homes.co.nz jumping 18% for the region when compared to the same time last year (Figure 3). Strong growth has been seen in Gore District (29% growth), while Southland and Invercargill City had less growth (18% each). This is most likely due to Invercargill and Southland being in a comparatively strong position in August last year whereas Gore has 'caught up'.

Data provided by REINZ shows that median house sale price is up 8.6% on August 2020 (Table 5). The fast-moving property market, coupled with low interest rates and limited rental properties available most likely been the driver of this uptake in both Southland and Gore, with more people opting to commute into the larger urban centres.



Figure 3: Median property value through Southland (Homes.co.nz)

| Area               | Median Value<br>August 20 | Median Value<br>August 2021 | Annual<br>Change |
|--------------------|---------------------------|-----------------------------|------------------|
| Southland District | \$317,569                 | \$373,215                   | 18%              |
| Gore District      | \$257,771                 | \$332,495                   | 29%              |
| Invercargill City  | \$350,802                 | \$415,637                   | 18%              |

Table 3: Median Property value through Southland (as reported by Homes.co.nz)

Table 4 below compares the median sale price of properties, for August as reported by REINZ, to the median property value as reported by Homes.co.nz. Both in Gore and Southland had a median sale price well above the median property value, showing competition in these markets (at 13% and 14% respectively). Invercargill surprisingly did not show this trend.

| Table 4: Median | Property valu  | e through S | outhland (as r  | enorted by | Homes co nz   |
|-----------------|----------------|-------------|-----------------|------------|---------------|
| Table 4. Meulan | Froperty value | ie unougn S | outilianu (as r | eponeu by  | HOILES.CO.IIZ |

| Area               | Median Sale Price<br>Aug-21 (REINZ) | Median Value Aug-21<br>(Homes.co.nz) | Percent<br>Difference |
|--------------------|-------------------------------------|--------------------------------------|-----------------------|
| Southland District | \$425,000                           | \$373,215                            | 14%                   |
| Gore District      | \$375,000                           | \$332,495                            | 13%                   |
| Invercargill City  | \$421,000                           | \$415,637                            | 1%                    |

| Table 5: August 2021 Regional Indicators (REINZ) for property sales |   |  |  |  |
|---|---|--|--|--|
| Southland Regional Indicators (REINZ), as at August 2021            |   |  |  |  |
| Median price  | Up 8.6% compared to same time last year                             |  |  |  |
| Sales count   | Up 46.8% compared to same time last year                            |  |  |  |
| Inventory   | Inventory 9 weeks, which is 6 weeks less than the same time last ye |  |  |  |
| Days to sell  | 33 days, 11 days less than the 10-year average for March.           |  |  |  |

Careful consideration needs to be given to the age and quality of housing stock. Great South has undertaken primary research and notes the work of the Southland Warm Homes Trust, EECA and Southland Power Trust in insulating over 8,000 houses (approximately 20% of the housing stock). Yet, newcomers to the region often comment on inadequate heating and insulation. There is a need to ensure that new homes are well insulated and that other factors, such orientation to the sun, are factored into subdivision and house planning.

### **Rental Market**

#### Long Term Rentals

According to Statistics New Zealand, Southland was the most affordable in 2018, with median rent at 11 percent of median household income (Stats NZ, 2020). Since the 2018 census, we have seen median weekly rental price (provided by Tenancy New Zealand) increase as shown below in Table 6.

| Median Weekly Rent | June 2018 | June 2021 | Percentage<br>Change |
|--------------------|-----------|-----------|----------------------|
| Southland District | \$220     | \$365     | 66%                  |
| Invercargill City  | \$250     | \$350     | 40%                  |
| Gore District      | \$220     | \$320     | 45%                  |

This increase is largely driven by the significant demand for property across the entire region, increase in property price, increase in population and low availability of rental stock. Real estate companies are reporting 20 to 30 people looking at the same property (Rowe and Jackson, 2020). Figure 4 below shows the relative median weekly rental price (right axis) compared to the house price. The volatility in the rental market and tourism accommodation demands, particularly in Southland District are evident in this.



Figure 4: Median weekly rental amount throughout Southland (Tenancy Services)


Figure 5: Dwelling Ownership (Statistics New Zealand) Dwelling not owned and not held in a family trust

- Dwelling held in family trust
- Dwelling owned or partly owned

Information provided by Statistics New Zealand from the 2018 census showed a decreasing ownership of dwellings across all three districts in Southland.

#### Short Term and Holiday House Rentals

Great South has monitored the number of properties listed across both HolidayHouses.co.nz and AirBnB.com (provided by Air DNA) for the Southland region and these are shown below (Fig. 6 and 7)

Since 2016, there have been around 200 properties listed throughout Southland on HolidayHouses.co.nz, and just over 1,000 properties on AirBnB.com. While there has been a reduction in properties available on both platforms since the COVID pandemic, this has equated to only around 200 fewer properties available, similar to 2018 levels.

| Number of Houses by Mo | nth                            |        |      |
|------------------------|--------------------------------|--------|------|
| 220                    |                                |        |      |
| 200                    |                                | $\sim$ |      |
| 180                    |                                |        |      |
| 160                    |                                |        |      |
| 2017                   | 2018                           | 2019   | 2020 |
| Figure 6: Properties   | s Listed on HolidavHouses.co.n | z      |      |



Figure 7: Properties listed on AirBnB.com (Air DNA)

### Social and Emergency Housing Demand

#### Housing Register – December 2020

Based on a review of the Housing Register (MSD, 2020)<sup>2</sup>, the demand for housing throughout the Southland Region has jumped from 59 applications on the Housing Register in 2018, to 202 in 2021, an increase of 242%. Note this is the number of applications and does not necessarily represent the number of people (e.g., families with children) looking for emergency housing.



#### Figure 8: Housing Register (Ministry of Social Development)

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|------|------|-------|-------|--|---------------|---------------------|-----------|-------------|-----------------------|--------------|-----------|--|
| 1 an | 10 / | · Pon | Innai | Incidnic   |               | Housing             | IMINIetry |             | and IIrnan            | INCOLOR      | mont 2021 |  |
| I ab |      |       | onai  | Instants   |               | nousinu             |           | UI HUUSIIIU |                       | Develor      |           |  |
|      |      |       |       |  |               |                     |           |             |                       |              |           |  |

|  | Gore District | Invercargill City | Southland District |
|--|---------------|-------------------|--------------------|
| Applicants on the<br>Housing Register                  | 22 (16)       | 150 (150)         | 21 (24)            |
| Public Housing<br>Tenancies                            | 38 (38)       | 342 (342)         | S (S)              |
| Number of<br>Emergency Housing<br>Special Needs Grants | 7 (21)        | 42 (62)           | S (6)              |
| Applicants on the<br>Transfer Register                 | S (0)         | 7 (6)             | 0 (0)              |
| Transitional Housing<br>Places                         | 6 (6)         | 42 (38)           | 0 (0)              |

Data Source: Public Housing in Southern Region, Ministry of Housing and Urban Development June 2021

Data in brackets denotes the previous quarter (March 21)

S denotes a small sample size which has been suppressed for privacy reasons

The use of motel type accommodation for emergency housing is placing pressure on event accommodation and is progressively reducing the total stock of commercial accommodation available.

<sup>&</sup>lt;sup>2</sup> Which provides the number of applicants assessed as eligible for social housing who are ready to be matched to a suitable property.

### Forecast Future Demand for Housing Stock

Infometrics provided a population forecast for the Southland region through until 2025. They state that *"Southland's population was 102,400 in 2020, and by 2025 is forecast to reach 109,600 under the medium scenario, 111,300 under the high scenario, and 108,800 under the low scenario"* (Infometrics, August 2021 p. 7). Adopting this forecast, and the regional average of 2.52 people per dwelling (at the 2013 census), further analysis can be undertaken to understand likely demand for housing stock over the next 5 years. Below, we consider each of the following scenario and assume a build rate of 237 houses per year<sup>3</sup>. Depending on the applied growth scenario outlined by Informetrics (2021), this forecasts a shortage of 2,423 to 3,415 houses in the region.



# Figure 9: Forecast deficit in housing stock, with different population scenarios (low, mid, high), and net increase of 237 houses per year (current levels)

Two further scenarios have been calculated, assuming an increased rate of building in Southland. Figure 10 shows what the forecast deficit would look like if the rate of building was to double over the next 5 years (i.e., 474 houses per year). Even in this scenario, assuming a 'mid' population growth, there is still a deficit of 1,792 houses in Southland.



Figure 10: Forecast deficit in housing stock, with different population scenarios (low, mid, high), and net increase of 474 houses per year (double current rates of building)

<sup>&</sup>lt;sup>3</sup> 237 per year is the net rate of growth in the number of dwellings available in Southland, as reported in census data





# Figure 11: Forecast deficit in housing stock, with different population scenarios (low, mid, high), and net increase of 948 houses per year (quadruple current rates of building)

Given this significant undersupply in property, and continual population growth pressures, priorities need to be placed on supporting the development of residential subdivision, infilling of existing residentially zoned land. We further recommend that careful consideration should be given to how housing for the elderly is developed, given Southland's aging population.

#### Summary

Based on data reviewed by Great South, we find the following:

- A key driver for Southland's housing market is the growth in population. Our initial estimate is there is an existing housing shortage of around 1,659 houses.
- This has put pressure on the existing undersupply of property in Southland and subsequently
  has driven significant increases in both property prices and rent. This increase is around 18%
  for the region in property value compared to the same time last year, while rents have on average
  increased 50% since 2018.
- Even if all residential properties consented for construction are constructed, this will not address the current demand for property.
- The downturn in tourism in some areas (such as Fiordland) has provided some relief from the rental property market perspective by freeing up Airbnb properties for longer term rental. However, this is not consistent across Southland.
- Access to residential property to buy and rent will be a key factor restricting future industry development in the region.
- We have seen a significant increase of 254% in the need for emergency housing in Southland since the previous report. This has not been matched by supply, which has remained flat since then. This requires an urgent review.
- A significant shortfall in housing is forecast assuming continued population growth and current rates of construction. Without action, this shortage could increase to 3,415 houses by the year 2025.
- This will significantly hamper the ability to achieve population growth, meet recruitment and skills attraction, and effectively service existing and new industry in the region.
- This report has shown that an increased shortage of housing is likely to become a driver of
  increased property and rental prices. This disproportionally affects the lower socioeconomic
  groups and will likely further increase demand for emergency housing.
- Despite the fact that Southland Warm Homes Trust has insulated more than 8,000 homes in the last 15 years, newcomers to the region are constantly concerned about inadequacy of Southland's home insulation and heating. Accordingly, there is a need to ensure that new homes are well insulated and that other factors such orientation to the sun is factored into subdivision and house planning.

- To meet the current projected housing demand, priorities need to be placed on the erection of residential subdivision and infilling of existing residential zones in Southland communities.
- It is important to note that, in spite of Southland's aging population, there has been very little if any investment in building retirement village units or town houses in the last 2 years.
- An increase in Gore housing needs has become more acute since the 2018 housing assessment.
- Housing demand on Rakiura Stewart Island has come under increasing pressure as visitor numbers continued to grow. There is also a significant need for housing for the elderly on the Island.
- The use of motel type accommodation for emergency housing is placing pressure on event accommodation and is progressively reducing the total stock of commercial accommodation available.

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# NET ZERO SOUTHLAND

Economic Mitigation Pathways Analysis to Net Zero Emissions for Southland

March 2021



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Cover page image courtesy of Great South. Viewed from Forest Hill Reserve looking north-east

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### Glossary

| Term                    | Definition  |  |  |  |  |  |
|-------------------------|---|--|--|--|--|--|
| Abatement               | A reduction in level, especially of something that is harmful.        |  |  |  |  |  |
| AECOM                   | An infrastructure firm providing in climate change and                |  |  |  |  |  |
|                         | environmental consulting services.                                    |  |  |  |  |  |
| Aerobic Digestion       | A process which uses bacteria and oxygen to break down organic and    |  |  |  |  |  |
|                         | biological waste.   |  |  |  |  |  |
| Baseline                | A starting point used for future comparisons.                         |  |  |  |  |  |
| BAU                     | Business as usual.  |  |  |  |  |  |
| BEV                     | Battery electric vehicle.   |  |  |  |  |  |
| Bioenergy               | Renewable energy produced by living organisms.                        |  |  |  |  |  |
| Biofuel                 | A fuel derived from living matter.                                    |  |  |  |  |  |
| Biogas                  | Gas (methane) derived from the fermentation of organic matter.        |  |  |  |  |  |
| Biogenic                | Produced or brought about by living organisms.                        |  |  |  |  |  |
| Biosequestration        | The net removal of carbon dioxide from the atmosphere by plants       |  |  |  |  |  |
|                         | and micro-organisms and its storage in vegetative biomass (trees,     |  |  |  |  |  |
|                         | plants) and in soils.   |  |  |  |  |  |
| Carbon Sequestration    | The process of capturing and storing atmospheric carbon dioxide.      |  |  |  |  |  |
|                         | He Pou a Rangi - Climate Change Commission                            |  |  |  |  |  |
| CH <sub>4</sub>         | Methodile.  |  |  |  |  |  |
| Climate Change          | necinitation wind patterns  |  |  |  |  |  |
| 60                      | precipitation, wind patterns.   |  |  |  |  |  |
| CU <sub>2</sub>         | Cal boll dioxide.   |  |  |  |  |  |
| EECA                    | Energy Efficiency and Conservation Authority                          |  |  |  |  |  |
| EECA                    | Liquid waste or sewage  |  |  |  |  |  |
| Furo6                   | A vehicle exhaust emissions standard for netrol and diesel vehicles   |  |  |  |  |  |
| 20100                   | developed by the European Emissions Standards                         |  |  |  |  |  |
| FCEV                    | Fuel cell electric vehicle.   |  |  |  |  |  |
| Fossil Fuel             | A fuel formed by natural processes of buried dead organisms of        |  |  |  |  |  |
|                         | biological origin.  |  |  |  |  |  |
| GDP                     | Gross Domestic Product.   |  |  |  |  |  |
| Greenhouse Gas          | A gas that contributes to the greenhouse effect by absorbing infrared |  |  |  |  |  |
|                         | radiation.  |  |  |  |  |  |
| ICE                     | Internal combustion engine.   |  |  |  |  |  |
| IPCC                    | (United Nations) Intergovernmental Panel on Climate Change.           |  |  |  |  |  |
| IPPU                    | Industrial processes and product use.                                 |  |  |  |  |  |
| kWh                     | Kilowatt hour (measure of energy over time).                          |  |  |  |  |  |
| LULUCF                  | Land use, land use change, and forestry.                              |  |  |  |  |  |
| Marginal Abatement Cost | The comparison between the financial costs and benefits associated    |  |  |  |  |  |
|                         | with the implementation of mitigation options and their emissions     |  |  |  |  |  |
|                         | abatement potential.  |  |  |  |  |  |
| Mitigation              | The process or result of making something less severe, serious, or    |  |  |  |  |  |
|                         | painful.  |  |  |  |  |  |
| Mitigation Pathway      | The resulting pathway modelled from the mitigation option.            |  |  |  |  |  |
| MtCO <sub>2</sub> e     | Megatonnes of carbon dioxide equivalent.                              |  |  |  |  |  |
| N0 <sub>2</sub>         | Nitrogen dioxide.   |  |  |  |  |  |
| NDC                     | National Determined Contribution                                      |  |  |  |  |  |

| Net Present Value  | The difference between the present value of cash inflow and the present value of cash outflow over a period of time. |
|--------------------|--|
|                    |  |
| Net Zero Emissions | The balance between the amount of greenhouse gas put into the  |
|                    | atmosphere and those taken out.  |
| NIWA               | National Institute of Water and Atmosphere.  |
| PCL                | Public Conservation Land   |
| Renewable          | (of a natural resource or source of energy) not depleted when used.  |
| tCO <sub>2</sub> e | Tonnes of carbon dioxide equivalent.   |

### 1. Executive summary

The New Zealand Government has committed to reaching net zero emissions of long lived gases by 2050, and to reducing biogenic methane emissions by between 24-47% by 2050 (Climate Change Commission, 2021). In 2018, Great South in partnership with the Ministry for the Environment and the Tindall Foundation, established the Carbon Neutral Advantage project with the key objective of providing a commitment to supporting Southern industries and communities towards establishing a competitive carbon neutral advantage and creating a sustainable environment for generations to come.

The purpose of the *Economic Mitigation Pathways Analysis to Net Zero Emissions for Southland* report (hereon referred to as the '*Net Zero Southland Report*') is to establish a baseline for carbon abatement and a high-level economic assessment of achieving net zero greenhouse gas emissions at regional scale. Key outcomes from this report will be the identification of implementable mitigation options for the Southland region, and the economic effect of these options towards achieving net zero emissions by 2050, which is in line with the mandated government directive of achieving net zero emissions by 2050 on a national scale.

A baseline emissions profile has been established for the region showing Southland contributes 9.7% to New Zealand's gross emissions. This equates to 8.9 megatonnes of carbon dioxide equivalent (MtCO2e) of total emissions. Agriculture contributes 69% of gross emissions, and 27.5% of Southland's gross emissions are offset by exotic and native forestry.

Two emission reduction themes were developed and modelled in this analysis reflecting different focus areas: Technology and Innovation, and Land Use and Agriculture. Corresponding mitigation options were identified and modelled to show the mitigation pathway to achieving net zero emissions with an economic analysis undertaken to provide the marginal abatement costs associated with these options.

Marginal abatement cost analysis evaluates the financial costs and benefits of implementing the identified mitigation options, and compares this to the mitigation option's emissions abatement potential, where abatement is the reduction in carbon dioxide equivalent. Figure 1 illustrates this relationship. Simply, the width of each column in the graph represents the potential reduction in carbon dioxide equivalent per year), with the height of the column representing the cost of implementing the mitigation option. Negative marginal abatement costs (such as mode shift and industrial boiler fuel switch) indicate an overall financial benefit for implementing the mitigation option.



Figure 1: Marginal abatement cost curve of the modelled mitigation options.

Key findings from the **overall analysis**:

- 1. Southland is not on track to meet net zero emissions under the current trajectory which is in line with the Climate Change Commission's findings for New Zealand in the Climate Change Commission's 2021 Draft Advice for Consultation (Climate Change Commission, 2021) (hereon known as the 'CCC Draft Advice').
- 2. An economically viable transition pathway to a net zero emissions economy exists for the Southland region using identified mitigation pathways which are complementary to the CCC Draft Advice.

Key findings from the **physical and economic risk analysis**:

- 1. Projected changes in the climate are diverse, reflecting geographic variability within the region. Changes include (but are not limited to) river and surface flooding in parts of the region, increased rainfall, rising surface temperatures, and increased hot days and greater risk of drought.
- 2. Economic impacts from changes in the climate are most strongly felt in the agriculture and tourism sectors. Impacts include fluctuations in crop yields and livestock productivity, pasture damage, increased expenditure to minimise flood impacts, infrastructure damage (e.g. airports) and loss of natural assets (e.g. walking and hiking trails).
- 3. All sectors benefit from acting early to implement emissions reduction strategies and limiting climate change impacts.

Key findings from the **emissions reduction modelling analysis**:

- 1. The Southland region can transition to a net zero emissions economy through a diverse portfolio of options.
- 2. Southland can achieve net zero emissions by 2050 from mitigation pathways with a positive net financial outcome using carbon pricing recommended by the CCC Draft Advice.
- 3. To give effect to emissions reductions across the region requires that action is embraced across all sectors.
- 4. Investment requirements are focussed on the sectors in which emissions reduction is strongest.
- 5. 80% of the abatement potential identified comes from mitigation options which provide a positive net financial outcome.
- 6. Mitigation options with positive net financial outcomes and low implementation costs include mode shift. Mitigation options with long-term economic benefits despite high implementation costs include fuel switching light vehicles to electric, fuel switching industrial boilers, conversion of livestock to crops and horticulture and biofuel capture from effluent.
- 7. Positive net present value mitigation pathways not only provide a financial return but contribute to reducing the physical impacts from climate change and deliver co-benefits.

Outcomes from the emissions reduction modelling analysis suggest Southland can achieve net zero emissions by 2050 with positive financial outcomes. To achieve this, a connected approach encompassing the social, environmental, and cultural values associated with achieving a net zero emissions future for Southland must be undertaken.

To give effect to the options modelled in this report it is recommended an effective implementation plan for Southland is developed.

### 2. Introduction

In Aotearoa, the Government has committed to reaching net zero emissions of long lived gases by 2050, and to reducing biogenic methane emissions by between 24-47% by 2050 (Climate Change Commission, 2021).

In addition to the economic benefits from reducing emissions and achieving net zero by 2050, transitioning to a low emissions economy will assist in mitigating the physical impacts of climate change. Whilst not quantitatively modelled, it is expected that physical risks from climate change would significantly affect Southland's economy, from infrastructure damage and the loss of tourism attractions, to productivity losses and increased volatility for the agriculture sector. As tourism and agriculture are Southland's largest contributors to GDP, it is critical to minimise its exposure to climate risks.

Southland is leading the way in identifying a future pathway to achieving a net zero emissions future where our environment will thrive, and our people will prosper. To that end, Great South (Southland's regional development agency) have partnered with The Tindall Foundation and the Ministry for the Environment to deliver the Carbon Neutral Advantage project – a three-year initiative bringing together regional industry leaders and community members to work together towards identifying pathways to achieving a low emissions future for Southland, and by extension New Zealand. One of the project's deliverables is the establishment of an econometric analysis for the Southland region.

Ernst & Young have been engaged by Great South to develop an econometric climate change analysis for the Southland region. This analysis comprises reviewing the current physical changes in the climate and the resulting economic risks to the region and comparing these to modelled emissions mitigation options for achieving net zero emissions (long lived and methane) for the Southland region.

Development of the mitigation options was focused on key sectors across Southland (transport, industry and land use and agriculture). The modelled net present value and marginal abatement costs have guided where the greatest opportunities to reduce emissions are, while retaining a stable Southland economy.

The *Net Zero Southland Report* is intended to provide options to aid decision making on the journey to achieving a low emissions future for Southland.

### 3. Motivation for Analysis

The Paris Agreement is a global agreement on climate change entered into force November 2016. The Paris Agreement commits all countries to act on climate change. New Zealand submitted a National Determined Contribution (NDC) under the Paris Agreement, committing to reducing greenhouse gas emissions by 30% below 2005 levels by 2030, which will apply from 2021.

In 2018, the United Nations Intergovernmental Panel on Climate Change (IPCC) released its special report *Global Warming of 1.5°C*. In this report, the IPCC alerted that limiting global warming to 1.5°C to avoid the worst effects of climate change implies reaching net zero emissions by 2050.

In 2019, the New Zealand government released the Climate Change Response (Zero Carbon) Amendment Act 2019 which provides a framework by which New Zealand can develop and implement clear and stable climate change policies to achieve New Zealand's commitment under the Paris Agreement, and to allow New Zealand to prepare for, and adapt to, the effects of climate change.

In December 2020, New Zealand declared a state of climate emergency and announced the Carbon Neutral Government Programme requiring all government organisations to be carbon neutral by 2025.

The Carbon Neutral Advantage project, led by Great South, was established in 2018 with specific project deliverables linked to the partnership funding with Ministry for the Environment and The Tindall Foundation. One of these deliverables is the development of an econometric climate change analysis for the Southland region.

This analysis builds on findings from:

- The Southland Climate Change Report (NIWA, 2018) prepared by the National Institute of Water and Atmosphere (NIWA) for Environment Southland, Invercargill City Council, Southland District Council and Gore District Council.
- The Southland Regional Greenhouse Gas Emissions Inventory (AECOM, 2018) developed by AECOM for Great South.
- Wood Energy South (<u>www.woodenergysouth.co.nz</u>) a project which Venture Southland<sup>1</sup> in conjunction with EECA coordinated as an authoritative source of current information and best practice aimed at promoting the use, and development of supply chains for clean wood energy in Southland.
- The Southland *Dairy Biogas Project* (Dairy Green Ltd, n.d.) a methane recovery project facilitated by Dairy Green Ltd on a 950 cow farm in Southland.
- The Strategy for Sustainable Business in Southland (Venture Southland, Sinclair Knight Merz Ltd, 2008).

<sup>&</sup>lt;sup>1</sup> Venture Southland became Great South in March 2019.

### 4. Approach and Engagement in Development of this Report

Great South have facilitated a collaborative approach and engaging process in the development of the Net Zero Southland Report.

Ernst & Young has a demonstrated history of providing expert climate change and economic modelling services to clients. To that end, Ernst & Young were engaged by Great South to identify, develop, model, and analyse economically viable mitigation scenarios to assist Southland with striving towards a net zero emissions future.

Specifically, Ernst & Young were engaged to conduct a review of the physical risks and potential economic impacts that climate change poses for Southland (Section 8), and to model for emissions reduction under a business as usual setting (Section 9.1), and under a mitigation scenario setting (Section 9.2).

A panel of youth (aged 18-25 years' old) representing the diverse economy, community and institutions in Southland was established with the purpose of engaging young minds to brainstorm their idea of what a net zero emissions future looks like for Southland, and the associated co-benefits. These outputs were used by Ernst & Young in their emissions reduction modelling.

Great South Strategic Projects workshopped mitigation options for Southland, with a focus towards identifying probable mitigation pathways, where the implementation probability scale correlates with being able to deliver on some of these options within the next ten years. Like the *CCC Draft Advice* released 31 January 2021, these mitigation options are focused on key sectors across the Southland region, identifying where the greatest opportunities to reduce emissions are.

The Carbon Neutral Advantage Project Steering and Advisory Groups were engaged to provide governance, technical expertise, and leadership in the development of this foundational report.

### 5. Development of the Mitigation Options and Themes

Ernst & Young and Great South collaboratively developed mitigation options that were used in the emissions reduction modelling. These options were largely determined from the emissions baseline and business as usual projection. Ernst & Young also engaged with the youth panel in a workshop setting to brainstorm and formulate mitigation options. The outputs from this workshop enabled Ernst & Young to identify a scaffold from which to present these options and the creation of two themes emerged: Technology and Innovation, and Land Use and Agriculture.

In a second iteration undertaken during the development of this report, Great South further refined these mitigation options to reflect a probability scale, whereby the probability of implementing the mitigation option within the next 1-10 years was determined. Great South also linked these probable mitigation options to the highest emitting sectors for the Southland region: land use and agriculture, industry, and transport. The results of this are detailed in Table 1.

| Theme                           | Sector                                      | Mitigation Option  | Description   |
|---------------------------------|---|--|---|
|                                 |   | Residential space<br>heating improvements                        | Floor and ceiling insulation, and double-<br>glazed windows in 80% of existing<br>residential homes by 2050.  |
|                                 |   | Landfill methane gas<br>capture                                  | Capture of methane gas produced in<br>landfills for combustion use primarily, and<br>to supply electrical as secondary.   |
|                                 | Industry                                    | Commercial boiler fuel transition                                | Converting all boilers from fossil fuels to<br>biomass, pellets and electricity at planned<br>replacement year or asset end of life.                                |
|                                 |   | Industrial boiler fuel transition                                | Converting all boilers from fossil fuels to<br>biomass and pellets at planned<br>replacement year or asset end of life.   |
|                                 |   | Biogas capture from<br>food waste                                | Capture of methane gas generated from<br>food waste, and generation of biogas in an<br>anaerobic digestion facility to substitute<br>electricity consumption.       |
| Technology<br>and<br>Innovation | Transport<br>Land Use<br>and<br>Agriculture | Mode shift   | Commuters living less than 5km from work<br>shifting mode of transport from car to<br>cycling, walking, public transport or shared<br>transport.                    |
|                                 |   | Heavy vehicle<br>transition to hydrogen                          | Transition heavy vehicles from fossil fuels to hydrogen, achieving a 60% share by 2050.   |
|                                 |   | Light vehicle transition to electric                             | Increasing the electric vehicle uptake rate<br>for light vehicles to achieve a 92% electric<br>vehicle share for this class by 2050.                                |
|                                 |   | Biogas capture from<br>dairy effluent                            | Capture of methane from dairy cattle<br>effluent at 430 Southland dairy farms with<br>the energy generated to be used on-farm.                                      |
|                                 |   | Public Conservation<br>Land (PCL) transition<br>to native forest | Converting 1,500ha high producing grassland, 18,500ha low producing and 4,500ha with woody biomass from Public Conservation Land ("PCL") to natural forest by 2050. |
|                                 |   | Selective breeding   | Selective breeding of dairy cattle, beef cattle and sheep that exhibit low residual   |

Table 1: Mitigation options developed for the emissions reduction modelling.

|                                |  |   | methane production. 30% adoption for cattle and 80% adoption for sheep.   |
|--------------------------------|--|---|---|
| Land Use<br>and<br>Agriculture |  | Grassland <sup>2</sup> transition to<br>riparian planting | 56,500 ha high producing land, 6,500 ha<br>low producing land and 2,000 ha grassland<br>with woody biomass converted to 50%<br>natural forest and 50% grassland with<br>woody biomass. This was modelled as a<br>piecewise uptake, with 50% of conversion<br>occurring between 2045-2050. |
|                                |  | Grassland transition to forestry                          | A net conversion of 7% from low producing farmland to forestry (half exotic and half native forest).  |
|                                |  | Farmland <sup>3</sup> transition to horticulture          | A net conversion of 4.1% from farmland<br>used for livestock raising, to crops and<br>horticulture between 2020 and 2050.   |
|                                |  | Farm stock reduction                                      | A 10% stock reduction in dairy cattle, beef cattle and sheep applied linearly from 2035 to 2050.  |

<sup>&</sup>lt;sup>2</sup> 'Grassland' is categorised by high producing, low producing and woody biomass as defined by the *Land Use and Carbon Analysis System - Satellite imagery interpretation guide for land-use classes* report prepared by Ministry for the Environment. <sup>3</sup> 'Farmland' is defined as being used for livestock raising (Parliamentary Commissioner for the Environment, 2019).

### 6. Alignment with the CCC's Draft Advice

It is important to note that the assumptions underpinning the mitigation options are in alignment with the *CCC Draft Advice* released in January 2021. Like the *CCC Draft Advice*, this report notes that current policies do not put New Zealand on track to meet the emissions budget under the Zero Carbon Act. This conclusion is reflected in our business-as-usual modelling.

Ernst & Young's emissions reduction modelling adopted the Transition Pathway One (TP1) carbon price, the most conservative price projection. This projection influenced the land use change observed under business-as-usual. The Climate Change Commission also separated carbon pricing into biogenic methane (ETS2) and all other gases (ETS1), with the biogenic methane price curve differing from all other gases by reducing in price from 2035 on, while the ETS1 continues to climb, resulting in the ETS1 price being six times higher than biogenic methane in 2050. Ernst & Young's emissions reduction modelling adopted a similar approach, applying the ETS2 carbon price to options with biogenic methane and the ETS1 carbon price to all other options.

Under the modelled business-as-usual, agricultural forecasts align with the *CCC Draft Advice* with a 15% reduction in livestock numbers modelled by 2035.

Like the *CCC Draft Advice*, this analysis includes a similar rate of uptake for light vehicle transition to electric vehicle by 2050.

In this analysis a transition to hydrogen fuel for heavy transport was modelled. The reason for this was that Southland acknowledges the real opportunity for this as a mitigation option in the region. This differs from the modelled heavy transport option in the *CCC Draft Advice*.

The conclusions from this report align with key findings from the *CCC Draft Advice*, which lays out the course for reducing emissions in New Zealand. However, the modelling scope and approach differs, so results may not be directly comparable.

### 7. Regional Physical Risks Analysis

Flooding and heatwaves are the two most prevalent physical risks Southland is predicted to experience. Fiordland is forecast to be most significantly impacted by the increase in rainfall, and the upper centre of Southland to be most affected by drought and an increase in hot days<sup>4</sup>. NIWA, 2018 predicts Southland's climate out to 2100 using climate markers such as temperature, precipitation, and rain frequency. This analysis used four Representation Concentration Pathway (RCP) scenarios, which indicate the increase in radiative force compared to pre-industrial values. All scenarios are possible, depending on how little action is taken to mitigate GHG emissions. The most significant impacts under the RCP8.5 scenario are considered in the analysis below, aligning to 3-4°C of warming by 2100, significantly over the goals set under the Paris Agreement and the Zero Carbon Act.

Figure 2 provides a high-level overview of Southland's Climate Change Risks in a simple infographic. With sea level rise affecting the southern coast; increased rainfall in Fiordland and the headwaters of all Southland's major rivers (Waiau, Aparima, Ōreti and Matāura); and increased hot days and drought risk across both the northern, and southern Southland plains.



Figure 2: Infographic demonstrating Southland's Climate Change Risks (source: Great South).

The differing sub-regional climate risks and key economic industries require localised adaptation strategies to maximise regional resilience. High level sub-regional summaries are presented in

<sup>&</sup>lt;sup>4</sup> (NIWA, 2018)

Appendix B and focus on the physical changes in the climate that will have the biggest local economic impact.

### 8. Quantitative Transition Modelling Results

Future GHG emissions projections are uncertain, encompassing unknowns in population and economic growth, technological developments, political, social and climate change. Acknowledging this level of uncertainty and using available data (refer to Appendix A for further detail), Ernst & Young developed credible mitigation pathways for achieving net zero emissions to assist Great South with evaluating and prioritising emissions mitigation options.

#### Carbon Dioxide Equivalent

Results from the emissions reduction modelling are expressed in carbon dioxide equivalent ( $CO_2e$ ) using the 100-year Global Warming Potential values.

The Global Warming Potential (GWP) is a concept used in calculating the "carbon dioxide equivalent"  $(CO_2e)$  of a mix of greenhouse gases, i.e. carbon dioxide, methane, nitrous oxide. The GWP is used to represent the effect of a particular gas's effect on global warming: how strongly it absorbs infrared radiation and how long it stays in the atmosphere. The GWP describes the number of grams of carbon dioxide that would provide the same "warming" effect over a certain period of time as one gram of the gas of interest.

Table 2 shows the GWPs for the different greenhouse gases for a 100-year time horizon.

| Table     | 2: 100 | ) vear | Global | Warming | Potentials   | (IPCC, | Fifth | Assessment | Report)  |
|-----------|--------|--------|--------|---------|--------------|--------|-------|------------|----------|
| 1 0 0 1 0 |        | ,,     | 010001 |         | 1 0001101010 | ( 00)  |       | ,          | 11000107 |

| Carbon dioxide (CO <sub>2</sub> ) | Methane (CH <sub>4</sub> ) | Nitrous oxide (N <sub>2</sub> O) |
|-----------------------------------|----------------------------|----------------------------------|
| 1                                 | 28                         | 265                              |

For example, methane has a 100 year global warming potential of 28, which suggests that for a given weight of methane released into the atmosphere now, would have 28 times as much effect on global warming over the next 100 years as would the same amount of carbon dioxide.

### 8.1 Business as Usual

Modelling a future where no additional mitigation options are implemented, "business as usual", is an important part of emissions reduction analysis as it provides a baseline against which to assess the impact of mitigation options. The business as usual scenario assumes that there will be no significant changes in technology, economics, or policies but current available mitigation options continue to be deployed. The business as usual scenario models what would happen if we did nothing beyond the status-quo. The key trends underpinning the Southland region's business as usual scenario are detailed in Table 3. The modelled assumptions used to support these trends are provided in Appendix A.

| Sector   | Key trends  |
|--|---|
| Agriculture  | Declining livestock numbers; falling nitrogen fertiliser application.   |
| LULUCF (Land Use,<br>Land Use Change, &<br>Forestry) | Converting low producing land to forestry (at a net conversion of 14% from 2020 to 2050).                       |
| Transport  | Electric and hydrogen fuel cell vehicle uptake in the light and heavy vehicle classes and in off-road vehicles. |
| Residential  | Relatively constant emissions, tied to population forecasts.  |

Table 3: Key trends under the business as usual scenario by sector.

| Commercial                                     | Rising emissions, tied to economic growth forecasts.  |  |  |
|--|---|--|--|
| Industrial                                     | Gradually falling emissions, tied to economic growth forecasts but<br>offset by expected efficiency improvements; the New Zealand<br>Aluminium Smelter closure significantly reduces emissions from this<br>sector.                         |  |  |
| Industrial Processes<br>and Product Use (IPPU) | Trends follow national emissions projections which sees IPPU<br>emissions rise in the near term and then gradually fall from around<br>2025; the New Zealand Aluminium Smelter closure significantly<br>reduces emissions from this sector. |  |  |
| Waste  | Rising emissions due to constant waste to landfill and rising degradable organic carbon stock.  |  |  |

The sectoral emissions profile of the business as usual scenario is depicted in Figure 3. By 2050, the Southland region's net emissions fall from 4.7 MtCO<sub>2</sub>e in 2018 to 1.3 MtCO<sub>2</sub>e in 2050, a reduction of 73%. Southland's gross emissions reduce by 33% from 2018 to 2050 and Southland's land use, land-use change, and forestry ("LULUCF") sector is able to sequester nearly 4 MtCO<sub>2</sub>e (76% of Southland's gross emissions) by 2050.

The highest emitting sectors in the Southland region are agriculture, industry, and transport (AECOM, 2018).

The industrial processes and product use ("IPPU") sector baseline data is drawn from many sources. Given limited data to accurately assess the baseline emissions from the IPPU sector, this sector has been excluded from the following mitigation analysis. The IPPU sector covers greenhouse gas emissions occurring from industrial processes, from the use of greenhouse gases in products, and from non-energy uses of fossil fuel carbon.



Figure 3: Business as usual modelled scenario.

### 8.2 Mitigation Pathways Analysis

Two emissions reduction themes were modelled: a Technology and Innovation theme and a Land Use and Agriculture theme. Both themes achieve net zero emissions by 2050, however, the sectoral and economic impacts are distinct. It should be noted that whilst mitigation options have been grouped in this way for the purposes of this analysis, nothing precludes Southland from pursuing its own portfolio of options.

"Key outcomes" (Table 4 and Table 6) are expressed as:

- Net Present Value (NPV) is the value of all future cashflows (benefits less costs) discounted to a present value. Assumptions underpinning these costs are provided in Appendix A.
- Total Abatement is the total reduction in carbon dioxide equivalent emissions to be realised by 2050.
- Average Annual Abatement is the reduction in carbon dioxide equivalent emissions averaged for each year out to 2050.
- Average cost per tCO<sub>2</sub>e abated is the Net Present Value divided by the Total Abatement to give the average net present value (expressed in dollars) per tonne of carbon dioxide equivalent that is abated.

### 8.2.1 Technology and Innovation Theme

This theme relies on a diverse technology mix of options across sectors combined achieving net zero. It reflects a collaborative approach to emissions reduction, as each sector implements mitigation options.

This theme includes mitigation options from the land use and agriculture sectors; specifically, selective breeding, biofuel capture from dairy effluent and Public Conservation Land transformation. These mitigation options are included in this theme, as they reflect technological improvements and innovation within the agricultural sector, rather than requiring land-use changes.

The path to net zero emissions under this theme is gradual and the overarching economic outcome is positive. Only targeting the positive net present value options will be even more favourable.

The key outcomes from this theme are in Table 4 and the mitigation path of all mitigation options are presented in Figure 4.

|                              | Net present<br>value | Average<br>annual<br>abatement | Total<br>abatement | Average cost<br>per tCO₂e<br>abated⁵ | Net zero<br>emissions<br>achieved by |
|------------------------------|----------------------|--------------------------------|--------------------|--------------------------------------|--------------------------------------|
| All options                  | \$ 788 million       | 788 ktCO₂e /<br>yr             | 23.1 MtCO₂e        | -\$34 / tCO2e                        | 2050                                 |
| Only positive<br>NPV options | \$ 817 million       | 777 ktCO₂e /<br>yr             | 22.8 MtCO₂e        | -\$36 / tCO₂e                        | 2050                                 |

Table 4: Key outcomes for the technology and innovation theme.

<sup>&</sup>lt;sup>5</sup> A negative result represents a financial benefit per tonne of abatement, as opposed to a cost



Figure 4: Modelled mitigation pathways of the technology and innovation theme (all options).

A description of each mitigation option underpinning this theme and their high level assumptions are listed in Table 5. Appendix A provides the detailed assumptions used in the emissions reduction modelling.

| Option   | High level assumption   |  |
|--|---|--|
| Landfill methane gas<br>capture                                  | Capture of methane gas produced in landfills for combustion use primarily, and to supply electrical as secondary.   |  |
| Biogas capture from<br>food waste                                | Diverting 10,000 tonnes of food waste per annum from landfill to use<br>as generation of biogas in an anaerobic digestion facility to substitute<br>process heat and electricity consumption. |  |
| Residential space<br>heating improvements                        | Floor and ceiling insulation, and double-glazed windows in 80% of existing residential homes by 2050.   |  |
| Commercial boiler fuel transition                                | Converting all boilers from fossil fuels to biomass, pellets or electricity at planned replacement year or asset end of life.   |  |
| Industrial boiler fuel<br>transition                             | Converting all boilers from fossil fuels to biomass, pellets or electricity at planned replacement year or asset end of life.   |  |
| Mode shift   | 30% of commuters living less than 5km from work shifting mode of transport from car to cycling, walking, public transport or shared transport.  |  |
| Heavy vehicle transition to hydrogen                             | Transition heavy vehicles from fossil fuels to green hydrogen, achieving a 60% share by 2050.   |  |
| Light vehicle transition to electric                             | Increasing the electric vehicle uptake rate for light vehicles to achieve a 92% electric vehicle share for this class by 2050.  |  |
| Selective breeding   | Selective breeding of dairy cattle, beef cattle and sheep that exhibit<br>low residual methane production. 80% adoption assumed for sheep<br>and 30% for dairy and beef cattle.               |  |
| Biogas capture from<br>dairy effluent                            | Capture of methane from dairy cattle effluent at 430 Southland dairy farms with the energy generated to be used on-farm.  |  |
| Public Conservation<br>Land (PCL) transition to<br>native forest | Converting a net 1,500ha high producing grassland, 18,500ha low producing and 4,500ha with woody biomass from Public Conservation Land to natural forest by 2050.                             |  |

Table 5: Mitigation options under the technology and innovation theme.

8.2.1.1 Challenges, Opportunities and Co-Benefits

#### Challenges

The main barrier for implementing innovative and technology-based options is the large upfront costs. This is a common barrier to implementing emissions reduction activities, such as switching to passenger electric vehicles. A review of barriers to electric vehicle uptake by the New Zealand Government highlighted that the upfront purchase price is the most significant and requires marketing or financial product innovation to overcome short-sightedness and human nature to preference smaller-sooner over larger-later rewards<sup>6</sup>. Capital and behavioural constraints will need to be overcome, as it is important to allocate capital today to avoid cost blowouts in the future. Interventions to overcome these barriers will lead to better long-term financial and environmental outcomes, potentially avoiding future write-offs and stranded assets.

<sup>&</sup>lt;sup>6</sup> (Hearnshaw & Girvan, 2018)

Several options within this theme entail significant fuel switching. For this theme to be feasible, a long-term secure supply of biomass is needed. Venture Southland in conjunction with Energy Efficiency & Conservation Authority (EECA) conducted the Wood Energy South project<sup>7</sup> which found that Southland's corporate forest estate is significant, stable, and provides a reliable woodflow supply. Furthermore, woodflows are planned to increase significantly in the future. This steady increase in harvest volume provides a secure supply for biomass users, which should be sustained into the future.

A consideration for selective breeding is the relationship between animals which exhibit low residual methane production and other favourable characteristics. It is expected that these won't be correlated, at least not as a general rule. It's therefore critical to determine whether there are sufficient incentives in place for farmers to choose to breed on the basis of low residual methane production as opposed to other characteristics, such as high milk production.

Current legislative challenges that reside within the "PCL transition to native forestry" mitigation option, includes the prevention of planting on Crown owned land administered by the Department of Conservation and/or local and regional councils.

#### Opportunities

There is an immediate opportunity to transition existing coal boilers to wood pellets or dried wood chip now rather than wait to end-of-asset-life. Conversion to wood pellets or dried wood chip would require changes to the fuel handling, storage infrastructure, and controls, and consideration would need to be given to the condition of the existing boilers, when they were commissioned, and their maintenance regime. Notwithstanding the immediate effect to carbon abatement that would be achieved with transitioning away from coal, the reduction in particulate emissions to atmosphere will improve air quality and thereby social and human health improvements.

Biogas capture and utilisation represents a significant opportunity for Southland. Methane capture from organic matter at landfills, wastewater treatment facilities and agricultural production can be captured and used primarily as process heat, but also to supply as electricity to the local grid.

The "biogas capture from food waste" mitigation option offers additional benefits to that of diverting food waste from landfill to a dedicated aerobic digestion facility. There is potential to establish biogas capture facilities on existing processing sites where generated food grade waste can be diverted from wastewater treatment plants to the onsite biogas facility where the product gas can be directly utilised.

With 58% of Southland's land either a national park or covered by the Conservation Estate of the Department of Conservation, there are significant opportunities for the public sector to either create initiatives or partnerships with private organisations and community groups to increase tree planting on these estates. Specifically planting to "right tree, right place" within riparian strips, ex-lease Public Conservation Land, and low marginal lands, with the co-benefits of any income generated from the regional carbon sink able to be invested back into the local community, plus displacing the potential for pest weeds to establish.

<sup>&</sup>lt;sup>7</sup> (Wood energy south, n.d.)

#### Co-Benefits

Alongside the modelled emissions reductions benefits, and corresponding financial benefits, a number of the mitigation options contribute additional benefits to society and the natural world.

- Most will be linked with air quality improvements, as reducing emissions for climate change reasons will directly impact this factor as well.
- Commuter mode shift will likely increase social connectivity, reduce congestion, free up people's time, and lead to mental and physical health improvements.
- Electrification of the light vehicle fleet will provide added storage capacity and modularity in the power network, providing real resilience benefits to energy and electricity supply.
- Capturing gas from dairy, industrial and metropolitan effluent, and food waste streams will allow for the potential of either electricity generation or production of biofuel. Situating these aerobic digestion plants alongside existing industry can provide significant process efficiencies, energy sharing and waste reduction through circular use of products.
- Native tree planting will provide additional biodiversity benefits.
- Focussing on innovation and emerging low-emissions technologies will provide potential job creation and the possibility of new export markets.

#### 8.2.2 Land Use and Agriculture Theme

This theme focuses primarily on transforming Southland's agricultural sector, which accounts for 69% of the region's emissions. The mitigation pathways not only reflect the greatest opportunity for emissions reduction, but also takes into consideration the wellbeing of the land, with the co-benefits of improved air and water quality.

The mitigation potential of the modelled pathways starts slowly before accelerating to net zero due to increasing and maturing forest estate. The combined financial metrics for this theme are less favourable compared to the Technology and Innovation theme, with a lower NPV of \$220 million. However, this theme is expected to reach net zero earlier at 2045, before going beyond net zero.

|                              | Net present<br>value | Average<br>annual<br>abatement    | Total<br>abatement       | Average cost<br>per tCO2e<br>abated | Net zero<br>emissions<br>achieved<br>by |
|------------------------------|----------------------|-----------------------------------|--------------------------|-------------------------------------|---|
| All options                  | \$ 220 million       | 1,074 ktCO <sub>2</sub> e /<br>yr | 30.7 MtCO <sub>2</sub> e | -\$7 / tCO2e                        | 2045                                    |
| Only positive<br>NPV options | \$ 514 million       | 907 ktCO <sub>2</sub> e / yr      | 28.0 MtCO <sub>2</sub> e | -\$18 / tCO2e                       | 2046                                    |

Table 6: Key outcomes for the land use and agriculture transformation theme.



Figure 5: Modelled mitigation pathways of the land use and agriculture theme (all options).

A description of each mitigation option underpinning this theme and their high-level assumptions are listed in Table 7. Appendix A provides the detailed assumptions used in the emissions reduction modelling.

| Option                                    | High level assumption  |
|---|--|
| Grassland transition to forestry          | A net conversion of 7% from low producing farmland to forestry<br>between 2020 and 2050 (using the Motu model <sup>8</sup> for land change<br>under the high carbon price scenario).   |
| Farm stock reduction                      | A 10% stock reduction in dairy cattle, beef cattle and sheep applied linearly from 2035 to 2050. This acts to increase land used by each animal.   |
| Farmland transition to horticulture       | A net conversion of 4.1% from farmland used for livestock raising to crops and horticulture between 2020 and 2050 (using the Motu model).  |
| Grassland transition to riparian planting | 56,500 ha of high producing land, 6,500 ha low producing land and 2,000 ha grassland with woody biomass converted to 50% natural forest and 50% grassland with woody biomass. This was modelled as a piecewise uptake, with 50% of conversion occurring between 2045-2050. |

Table 7: Mitigation options under the land use and agriculture theme.

#### 8.2.2.1 Challenges, Opportunities and Co-Benefits

#### Challenges

Under the "Grassland transition to forestry" mitigation option, low producing farmland is converted equally into pine forest (harvested at 25 years) and native forest (not harvested thus acting as a carbon bank) and includes the cost of land conversion, planting, pruning and insurance. The inclusion of agriculture and forestry in the New Zealand Emissions Trading Scheme (NZ ETS) is a large driver behind this option's financial benefit. However, it is not a silver bullet. The Forestry Reference Group highlighted in their recent report that the potential of the NZ ETS to encourage afforestation is confounded by the reluctance of farmers to change land use, uncertainty around carbon prices, high land prices, and controls on forest establishment and harvesting. Unless these factors are addressed in ways that fairly spread the sectoral costs, it is unlikely; anything like the area of trees suggested in zero-carbon models will be planted<sup>9</sup>.

Whilst farm stock reduction has little economic appeal, there is a growing appetite for sustainably raised meats. One benefit of reducing farm intensity, in conjunction with other regenerative measures, may be access to the market for low carbon and sustainable agricultural products. These

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<sup>9</sup> (Forestry Reference Group, 2018)
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<sup>&</sup>lt;sup>8</sup> Motu (a research institute) modelled the interaction between carbon price and land use change for a report commissioned by the parliamentary commissioner for the environment. This model incorporates the Land Use in Rural New Zealand (LURNZ) model to simulate how major land use sectors (forestry, horticulture, dairy, sheep and beef farming) change in response to changes in the carbon price. This is driven by two sub-models that are econometrically estimated. The first incorporates national level drivers of change (including commodity prices), while the second is a spatial model determining the spatial location of land use relating to geophysical characteristics of the land (e.g. slope, land use capability) to find proxies for cost of market access and feasibility of conversion. With the spatial projection, the LURNZ model determines land production, associated emissions and in turn profitability of each parcel of land. Changing the carbon price effects the optimal distribution of land. Southland's land transformation theme used the land change associated with a higher carbon price, capturing the hectares of land that are spatially able to be converted.

products generally earn a price premium to their unsustainable counterparts. This premium has not been modelled as part of this analysis.

Feasibility studies at the farm-level are needed to realise these opportunities. Considering livestock to crops and horticulture, these studies will ensure that; crops are selected that suit the land's soil and climate, costs are known, retail ties are created, and skilled labour is available to assist with the conversion. Careful consideration of additional inputs required in the conversion to horticultural, such as fertiliser and water, is required to ensure the conversion will reduce emissions and not jeopardise other natural resources. Local governments or Government-owned entities, such as Pāmu, may choose to adopt a leadership position and convert low producing council land into forest estate or trial new farming low-emissions practices.

#### Opportunities

A key consideration for "Farmland transition to horticulture" mitigation option is the suitability of different plants to Southland's climate and terrain. Crops that have been considered as being commercially viable in Southland include oats, hemp, blueberries and amaranth grain<sup>10</sup>. It should be noted that average earnings before interest and taxes per ha data was used to derive the financials. As the analysis was high-level and not at the implementation level, we did not look at the feasibility of individual crops and the potential opportunity that exists for each crop. New Zealand's social awareness of climate change is increasing with 1 in 3 New Zealanders consciously limiting their meat consumption<sup>11</sup>. The conversion of farmland to the production of vegetarian protein alternatives may allow farmers to position themselves in line with this emerging trend. Furthermore, reduced supply of meat proteins production may assist in stabilising the profitability of meat farms that choose to continue operating.

#### **Co-Benefits**

The mitigation options identified in the land use and agriculture theme all share some significant key co-benefits. Water quality, air purification, habitat creation and connectivity, and biodiversity values are all set to increase. Many of the pathways that include planting trees will contribute to local climate and microclimate moderation and modification by storing more water in the system and thereby mitigating against more extreme weather events. Vegetation around riparian zones has the added benefit of slowing water flows and improving infiltration which helps to prevent and mitigate against flood events and associated impacts.

Most mitigation options will increase and improve soil quality and soil carbon – notably the land use change to horticulture will improve the quality of pastoral land. Moreover, forestry products provide a source of renewable biofuel, an opportunity to achieve long-term sequestration and provide carbon storage through wood products and construction.

<sup>&</sup>lt;sup>10</sup> (Great South, 2019)

<sup>&</sup>lt;sup>11</sup> (Brunton, 2019)

### 8.3 Economic Assessment

Results of the emissions reduction modelling clearly show Southland can reach net zero emissions by 2050. This can be achieved with a positive net present value across both themes, when a carbon price is included in the modelling. An in-depth discussion of the economic findings associated with the modelled transition pathways is provided here.

This discussion includes the net present value pathways and a marginal abatement cost analysis of all options. The net present value pathways reflect the cost-benefit relationship for the mitigation options modelled over time. The marginal abatement cost analysis provides a convenient metric with which to analyse the most cost effective and influential emissions abatement options. This will be particularly valuable when identifying the portfolio of emissions reduction projects the region will adopt and implement.

Table 8 provides an overarching breakdown of the economic outcomes, and emissions abatement for all the mitigation options identified in this analysis.

| Option                                    | Average annual<br>abatement (tCO2e<br>pa) | Marginal<br>Abatement Cost <sup>12</sup><br>(\$ / tCO2e) | Net Present Value<br>(\$m) |  |  |
|---|---|--|----------------------------|--|--|
| Land Use and Agriculture                  |   |  |                            |  |  |
| Farmland transition to horticulture       | 78,590                                    | -22  | 57                         |  |  |
| Farm stock reduction                      | 166,740                                   | 110  | -294                       |  |  |
| Biogas capture from dairy effluent        | 39,220                                    | -3   | 3                          |  |  |
| Selective breeding                        | 70,740                                    | -19  | 41                         |  |  |
| Grassland transition to forestry          | 332,050                                   | -26  | 277                        |  |  |
| Grassland transition to riparian planting | 496,720                                   | -12  | 181                        |  |  |
| Public Conservation Land transition to    |   |  |                            |  |  |
| native forest                             | 234,870                                   | -29  | 188                        |  |  |
| Transport                                 |   |  |                            |  |  |
| Light vehicle transition to electric      | 18,220                                    | -203   | 118                        |  |  |
| Heavy vehicle transition to hydrogen      | 7,720                                     | -38  | 8                          |  |  |
| Mode shift                                | 2,730                                     | -363   | 31                         |  |  |
| Industry                                  |   |  |                            |  |  |
| Industrial boiler fuel transition         | 376,450                                   | -37  | 423                        |  |  |
| Commercial boiler fuel transition         | 18,050                                    | -6   | 3                          |  |  |
| Residential space heating improvements    | 150                                       | 6482   | -28                        |  |  |
| Landfill methane gas capture              | 12,580                                    | -12  | 4                          |  |  |
| Biogas capture from food waste            | 10,640                                    | 6  | -2                         |  |  |

Table 8: Modelling results for all mitigation options

### 8.3.1 Net Present Value

Net Present Value (NPV) - is the value of all future cashflows (benefits less costs) discounted to a present value. Our NPV analysis includes the financial impacts of a future carbon price using the Climate Change Commission's recommendations (refer to Appendix A for the carbon price assumptions underpinning this analysis). Of the two themes modelled, the Technology and Innovation theme returns a higher positive economic outcome for the region, as it is estimated to have a higher positive NPV. This theme reaches a breakeven point in 2033 and has a net present value of \$788

 $<sup>^{12}</sup>$  A negative MAC result represents a financial benefit per tonne of abatement, as opposed to a cost


million. The benefit-cost ratio (BCR) of this theme is 1.44, where the BCR is the ratio of discounted benefits relative to discounted costs.

Figure 6: Cumulative cost benefit of the technology and innovation theme.

The mitigation options driving this positive financial outcome are industrial boiler fuel transition, light vehicle fuel transition and selective breeding, as well as mode shift to a lesser but still significant degree. Selective breeding and mode shift have minimal costs associated with them and derive significant benefits from avoided carbon price payments. Both industrial boiler and light vehicle fuel transition benefit from efficiency improvements and lower energy prices in addition to avoided carbon price payments.

The land use and agriculture theme provide a smaller NPV in the modelled period to 2050 at \$220 million and a benefit-cost ratio of 1.05. This option's financial feasibility is largely driven by the carbon price, making land converted to forestry more profitable due to the large sequestration potential.



Figure 7: Cumulative cost benefit of the land use and agriculture theme.

Although the NPV of this theme is positive, it contains one NPV negative option, farm stock reduction, reflecting that the biogenic methane carbon price does not offset the profitability loss from reducing livestock numbers, if there is no offsetting increase in productivity from the smaller herd.

Overall, this theme breaks even by 2043. The main driver for the financial benefit is the carbon price, indicating the power of instituting a carbon price in driving a change in market profitability.

Figure 8 shows the cumulative cost benefit of the portfolio of all positive NPV options.



Figure 8: Cumulative cost benefit of the portfolio of all positive NPV options.

## 8.3.2 Marginal Abatement Cost Analysis

Marginal abatement cost ("MAC") analysis evaluates the financial costs and benefits of implementing mitigation options and compares this to their emissions abatement potential. A marginal abatement cost curve is used to visually summarise the estimated quantity of emissions reductions and the net cost of achieving those emissions reductions for a portfolio of mitigation options. It can be used to inform the prioritisation of mitigation options.

This analysis includes a price on carbon which in part acts to monetise the benefit to the environment of reducing emissions.

The results of the marginal abatement cost analysis are presented on Figure 9<sup>13</sup>.

<sup>&</sup>lt;sup>13</sup> Residential space heating improvements is excluded as it is high cost and low abatement and would skew the chart



Figure 9: Marginal abatement cost curve of the modelled mitigation options.

Marginal abatement cost is the price of abating one tonne of carbon dioxide equivalent. A MACC's vertical axis plots the cost of abatement ( $\frac{1}{tCO_2e}$ ) against the horizontal axis of potential volume of abatement ( $tCO_2e$ ). Each column on the graph represents a different abatement measure, with the width representing the potential average annual abatement and the height representing the cost.

All abatement measures below the horizontal axis indicate a net financial benefit.

80% of the potential abatement options in this analysis are NPV positive and suggest a positive economic outcome for the Southland region.

| Mitigation option                                       | Net present<br>value (\$m) | Average<br>annual<br>abatement<br>(ktCO₂e /<br>year) | Total<br>abatement<br>(ktCO₂e) | Average<br>cost per<br>tCO <sub>2</sub> e<br>abated (\$ /<br>tCO <sub>2</sub> e) |
|---|----------------------------|--|--------------------------------|--|
| Mode shift  | 31                         | 3  | 85                             | -363   |
| Light vehicle transition to electric                    | 118                        | 18   | 580                            | -203   |
| Heavy vehicle transition to hydrogen                    | 8                          | 8  | 200                            | -38  |
| Industrial boiler fuel transition                       | 423                        | 376  | 11,280                         | -37  |
| Public Conservation Land transition to<br>native forest | 188                        | 235  | 6,580                          | -29  |
| Grassland transition to forestry                        | 277                        | 332  | 10,630                         | -26  |
| Farmland transition to horticulture                     | 57                         | 79   | 2,520                          | -22  |
| Selective breeding                                      | 41                         | 71   | 2,120                          | -19  |
| Landfill methane gas capture                            | 4                          | 13   | 350                            | -12  |
| Grassland transition to riparian planting               | 181                        | 497  | 14,900                         | -12  |
| Commercial boiler fuel transition                       | 3                          | 18   | 560                            | -6   |
| Biogas capture from dairy effluent                      | 3                          | 39   | 1,180                          | -3   |
| Biogas capture from food waste                          | -2                         | 11   | 290                            | 6  |
| Farm stock reduction                                    | -294                       | 167  | 2,670                          | 110  |
| Residential space heating improvements                  | -28                        | 0.1  | 4                              | 6,482  |

Table 9: Key metrics for the individual mitigation options.

The options which are NPV positive have either low implementation costs or provide financial benefits which over time exceed their costs, assisted by either avoiding payments or receiving revenue from a carbon price.

NPV positive options with low implementation costs include biking or walking to work instead of commuting by car and selective breeding with marginal abatement costs of -363 per tCO<sub>2</sub>e and -19 per tCO<sub>2</sub>e respectively.

The positive NPV options where financial benefits outweigh costs over time include light vehicle fuel switching (at -203 per tCO<sub>2</sub>e), industrial boiler fuel transition (at -37 per tCO<sub>2</sub>e) and converting farmland to horticulture (at -22 per tCO<sub>2</sub>e).

Both the Public Conservation Land transition to native forest, and grassland transition to forestry options have positive NPV, with the Public Conservation Land having a slightly higher abatement cost

(at -\$29 per tCO<sub>2</sub>e) compared to (at -\$26 per tCO<sub>2</sub>e) due to Public Conservation Land not foregoing livestock profit.

Investment is not spread evenly across the economy, but is focused on the sectors in which emissions reduction is strongest

Table 10 shows the cost of all mitigation options irrespective of theme by sector, where cost encapsulates capital expenditure, operation, and maintenance costs as well as changes in earnings. All discounted values are expressed in 2020 dollars.

| Sector      | Cumulative<br>mitigation<br>potential 2020-<br>2050 (ktCO2e) | Discounted cost<br>(2020 \$m) | Discounted benefit<br>(2020 \$m) | NPV<br>(2020 \$m) |
|-------------|--|-------------------------------|----------------------------------|-------------------|
| LULUCF      | 34,618   | 4,112                         | 4,807                            | 694               |
| Industrial  | 11,282   | 709                           | 1,132                            | 423               |
| Agriculture | 5,966  | 404                           | 154                              | -250              |
| Transport   | 869  | 734                           | 890                              | 157               |
| Waste       | 640  | 30                            | 33                               | 3                 |
| Commercial  | 559  | 79                            | 82                               | 3                 |
| Residential | 4  | 30                            | 3                                | -28               |

Table 10: Cost by sector.

The land use and agriculture sectors have the greatest potential for emissions reduction and sequestration. However, to reduce emissions in these sectors will require extensive system change and come at a significant cost. The discounted cost to achieve the modelled emissions reduction within land use and agriculture is \$4.52 billion over the modelled period to 2050. This is due to the high costs of land conversion and lower and deferred earnings from forestry, when compared with livestock production. The largest up-front capital investment is in land conversion from farmland to horticulture farming.

Another challenge for these sectors is the absence of incentives. It is expected that individual land and farm-holders will bear the costs as they will need to make drastic changes including converting their land to forestry or horticulture and reducing their stocking rate. There has historically been little government support for agriculture with New Zealand farm subsidies ending in 1984<sup>14</sup>. Introducing pricing on agricultural emissions<sup>15</sup> will effect some change in these sectors, but this will also be a cost on farmers without additional incentives.

The transport and industrial sector mitigation options also require significant investment. However, avoided fuel costs and efficiency improvements reduce the overall impacts of these up-front costs. The discounted total cost for the transport sector is \$734 million offset by the discounted total benefit of \$890 million. In the industrial sector, the discounted benefit of \$1.13 billion outweighs the up-front costs and the total discounted cost of \$709 million. The initial capital outlay requirements nonetheless pose a challenge for these sectors. To partly account for this, we have modelled for end of life asset replacements in these sectors.

<sup>14</sup> (Nightingale, 2008)

<sup>15</sup> (Ministry for the Environment, 2020)

The commercial, residential and waste sectors require comparatively less investment. This correlates with their lower emissions reduction potential. A combined discounted cost of \$140 million contributes 3.5% of the abatement in the technology and innovation theme in 2050.

This uneven distribution of investment across the economy and between economic sectors warrants careful consideration when developing policy to ensure a fair and orderly transition.

# 9. Discussion

## 9.1 Transport

Lowering emissions from internal combustion engines (ICEs) in the light and heavy vehicle industry both represent financially attractive options. With the light vehicle transition to battery electric vehicles (BEVs) giving an NPV of \$118 million and the heavy vehicle transition to hydrogen fuel cell electric vehicles (FCEVs) giving an NPV of \$7.6 million. The fuel switching technology is determined by the end use requirements of the different vehicle classes.

BEVs are currently 2.9x more efficient than FCEVs (per unit of kWh input to output)<sup>16</sup>. Although FCEVs are likely to undergo significant efficiency improvement in the near future, it is unlikely they will overtake BEV efficiency across shorter ranges. This is because BEVs have superior fuel production efficiency with a direct conversion from grid electricity to internal storage only resulting in a 5% energy loss. On the contrary, FCEVs has energy loss in electrolysis, transport, storage and distribution, resulting in a 48% energy loss from electricity source to vehicle fuel<sup>17</sup>. The lower energy loss correlates to lower operational expenditure, and the past ten years have seen a large decrease in BEV passenger capital price. Passenger BEVs are currently a financially attractive option, with comparable CapEx to ICE and significantly lower operational costs, alongside lower emissions. The financial favourability of BEVs is only expected to grow as fossil fuels are subjected to the carbon price.

BEVs attractiveness begins to break down in the heavy vehicle sector as the trucks battery's weight soon offsets the energy efficiency savings and restricts carrying capacity<sup>18</sup>. Range and refuelling also provide additional constraints in BEV trucks with a max range of 800km and a charging time of 8 hours (overnight)<sup>19</sup>. Reduced carrying capacity, range and long refuelling time collectively place considerable constraints to switching to BEV in the heavy transport industry. FCEVs offer a more practical transition option, with a similar range, towing capacity and refuelling time as ICEs. However, hydrogen technology is still in its infancy, creating uncertainty around cost and efficiency improvements, with significant improvement in both areas required to be a viable commercial alternative. Various studies have forecast total cost of ownership (TCO) by kilometre, with a global study conducted by Deloitte forecasting breakeven of FCEVs and ICEs by 2028<sup>20</sup> and a national study forecasting breakeven point in 2030<sup>24</sup>.

Overall, the current feasibility analysis indicates that FCEVs are the most viable option for lowering emissions in the heavy road vehicle industry and BEVs for the passenger vehicle industry. With passenger BEVs profitable and viable now, and investment required to make heavy FCEVs cost competitive and commercially viable in the future. Notwithstanding such investment in advancing this technology, a current best practise option would be to mandate that only Euro6 standard heavy transport vehicles are allowed as new imports into New Zealand. This would have to be mandated at a national policy level.

<sup>&</sup>lt;sup>16</sup> (Transport & Environment, 2020)

<sup>&</sup>lt;sup>17</sup> (Transport & Environment, 2020)

<sup>&</sup>lt;sup>18</sup> (Ara Ake, 2020)

<sup>&</sup>lt;sup>19</sup> (Transport & Environment, 2020)

<sup>&</sup>lt;sup>20</sup> (Deloitte, 2020)

## 9.2 Industry

To effect immediate benefit across carbon abatement and cost effectiveness, an approach that focuses on efficiency improvements should be adopted as a priority. This can be applied through measures such as: using efficient appliances, reducing power losses associated with harmonics the power factor, improving the efficiency of electricity distribution, ensuring efficient transport and distribution of resources, and maximising thermal efficiency of biogas capture from methane as an energy source.

The use of biogas (methane capture from dairy effluent, metropolitan and industrial effluent) as a direct replacement for liquid petroleum gas (LPG) in commercial cooking applications may offer an achievable and affordable fuel replacement option.

There is an immediate opportunity to transition existing coal boilers to wood pellets or dried wood chip now rather than wait to end of asset life. As boilers are replaced or converted, the carbon abatement will be quantified and recorded as part of the regional emissions profile tracking.

As part of their submission to the *CCC's Draft Advice*, Great South have advocated for policy change to favour wood, or other carbon neutral materials, in construction. The benefit in this is the long-term storage potential these materials offer, with the co-benefit of increased land use change to forest associated with the increased demand for wood products.

## 9.3 Land Use and Agriculture

This theme focuses heavily on biosequestration to achieve net zero emissions. The technology and innovation theme achieve net zero emissions by focusing on reducing gross emissions, whereas the land use and agriculture theme primarily targets increasing sequestration. Both themes reach net zero emissions, however, sequestration is less sustainable in the long term; as it is constrained by land availability and the maturation of forests (as forests mature, they sequester less carbon). Therefore, in the longer term, when Southland has maximised its biosequestration potential, the offsetting of emissions from forests will reduce significantly. This will delay the burden of addressing high gross emissions to future generations. So, whilst it is a short to medium term measure to assist with the transition to a net zero emissions economy, in the longer term, gross emissions need to fall. Thus, land transformation offers a *buffer* of time to allow other industries to implement low emission practices and technology to achieve a sustainable net zero emissions economy for Southland's future.

Although not quantitatively modelled in this report, there are substantial on-farm emission reductions to be made through agricultural practice changes such as rotational cropping, direct drilling, low tillage and a move away from high fertility, short rotational grasses. These are sometimes referred to as regenerative agricultural practices.

Agriculture is the largest contributor to both emissions, and GDP in the Southland region. Farmers make a significant contribution to the Southland economy and society, but reducing their emissions footprint is imperative for the region to meet the ambition of the Zero Carbon Act. Emission reductions made today will ensure a fair future for generations to come.

The identified mitigation options and modelled pathways presented here are intended to provide quantifiable options to effect real change with respect to achieving a net zero emissions pathway for the Southland region while retaining a resilient economy. Successful emission reduction action must come from <u>all</u> sectors. It is acknowledged that across New Zealand there are many groups focused

on tackling climate change. It is recommended that an effective implementation plan for Southland is developed, leveraging the work of these groups.

# 10. Conclusion

In Aotearoa, the Government has committed to reaching net zero emissions of long lived gases by 2050, and to reducing biogenic methane emissions by between 24-47% by 2050 (Climate Change Commission, 2021)

Southland has recognised the need to be proactive in its approach to identifying mitigation pathways to achieving net zero emissions by 2050.

This document outlines, quantifies and summarises the economically viable mitigation pathways available to the Southland region to achieve a net zero emissions economy for the long-term.

Fifteen mitigation options were identified as probable pathways for Southland grouped by two main themes: Technology and Innovation, and Land Use and Agriculture. The key findings from the mitigation reduction analysis were:

- Southland can transition to a net zero emissions economy by 2050 through a diverse portfolio of mitigation options.
- Southland can achieve net zero emissions by 2050 with a positive net financial outcome.
- To give effect to emissions reductions across the region, it requires that action is embraced across all sectors.
- The identified mitigation options are not all-inclusive but rather identify probable pathways for the greatest emission reduction.
- The Technology and Innovation theme offers a potential net present value of \$817 million to the economy if pursued.

Recommendations for consideration include:

- A collective and connected approach is considered when striving towards our net emissions future, considering culture, people, and environment.
- Developing an effective implementation plan to guide Southland's path to a net zero emissions economy.
- The creation of a circular economy within the mitigation framework, where possible.
- Focussing on pursuing a portfolio of the positive NPV options that achieve net zero emissions, such as those outlined in Table 11.
- Developing regular internal and external reporting channels, reflecting carbon reduction achievements.

## Table 11: Positive NPV options.

| Option  | Average annual<br>abatement<br>(tCO₂e pa) | NPV<br>(\$m) | MAC<br>(\$ / tCO <sub>2</sub> e) |
|---|---|--------------|----------------------------------|
| Grassland transition to riparian planting               | 497,000                                   | 181          | -12                              |
| Industrial boiler fuel transition                       | 376,000                                   | 423          | -37                              |
| Grassland transition to forestry                        | 332, 000                                  | 277          | -26                              |
| Public Conservation Land transition to<br>native forest | 235,000                                   | 188          | -29                              |
| Farmland transition to horticulture                     | 78,000                                    | 57           | -22                              |
| Selective breeding                                      | 71,000                                    | 41           | -19                              |
| Biogas capture from dairy effluent                      | 40, 000                                   | 3            | -3                               |
| Light vehicle transition to electric                    | 18,000                                    | 118          | -203                             |
| Commercial boiler fuel transition                       | 18,000                                    | 3            | -6                               |
| Landfill methane gas capture                            | 12,000                                    | 4            | -12                              |
| Heavy vehicle transition to hydrogen                    | 7,700                                     | 7            | -38                              |
| Mode shift  | 2,700                                     | 30           | -363                             |

# Limitations

This analysis required EY to perform long term forward-looking analysis. This type of analysis includes high levels of uncertainty surrounding:

- The variables underpinning business as usual emissions projections, for example livestock numbers and industrial activity;
- Capital, operation and maintenance costs of the mitigation options;
- Macro parameters, including the price on carbon; and
- The feasibility and effectiveness of mitigation measures at the forecast implementation level

Caution should be used when relying on or interpreting the results, due to its long-term nature and inherent uncertainties.

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# Appendix A Technical Method

The following pages list the key assumptions applied in this analysis.

For further detail, and to view the data and calculations, please refer to the emissions modelling tool supplied to Great South.

| MACRO ASSUMP                               | PTIONS  |
|--|---|
| Discount rate                              | Discount rate of 6% applied to nominal cash flows.  |
| Carbon price                               | Adopted the TP1 carbon price projections for biogenic methane, ETS2, and all other gases, ETS1, from the Climate Change Commission's <i>Draft Advice for Consultation</i> report.   |
| Energy prices                              | Nominal prices held constant at current levels to 2050.   |
| Electricity grid<br>emissions<br>intensity | Held constant at 0.0977 kgCO2e / kWh.   |
| Population                                 | Subnational population projections to 2043 are sourced from Stats NZ. Population is extrapolated based on the historical trend to 2050.   |
| Regional GDP                               | National Westpac forecasts of GDP to 2028 (as at 2 October 2020) are used, followed by growth of 1.66% each year to 2050.   |
| BUSINESS AS US                             | SUAL ASSUMPTIONS  |
| Agriculture                                |   |
| Livestock                                  | Historical livestock numbers to 2019 sourced from Stats NZ.   |
|  | A logarithmic relationship was fitted to historical data and extrapolated to project livestock numbers to 2050. This relationship was followed for other cattle, sheep, horses and deer. Swine and goat numbers were held constant. Dairy cattle numbers are projected to steadily decrease reflecting expected trends. |
|  | Emission factors for enteric fermentation and manure management were sourced from<br>the Ministry for Primary Industries (MPI) 2020 agriculture inventory methodology report<br>and 2006 IPCC Guidelines for National Greenhouse Gas Inventories worksheets 3A1 and<br>3A2.   |
|  | Reference:<br>Stats NZ. Livestock Numbers by Regional Council. Retrieved from<br>http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7423#  |
|  | Ministry for Primary Industries. (June 2020). <i>Methodology for calculation of New Zealand's agricultural greenhouse gas emission</i> . Retrieved from https//mpi.govt.nz/dmsdocument/13906/direct   |
|  | 2006 IPCC Guidelines for National Greenhouse Gas Inventories Vol 4 Agriculture, Forestry<br>and Other Land Use, Annex 1 Worksheets - 3A1 and 3A2. Retrieved from https://ipcc-<br>nggip.iges.or.jp/public/2006gl/vol4.html  |
| Fertiliser                                 | Lime and dolomite values obtained from Stats NZ's fertiliser and lime applied by territorial authority and type for the year to 30 June 2012.   |
|  | Nitrogen fertiliser values obtained from Stats NZ's 2017 Nitrogen and phosphorus in fertilisers. National level data was used to apportion Southland's nitrogen fertiliser into urea, diammonium phosphate and ammonium sulphate.   |

|                                | Projected fertiliser application was based on historical trends and expected trends (e.g. water policy reforms) as well as consultation with the Fertiliser Association of New Zealand.  |
|--------------------------------|--|
|                                | Emission factors are sourced from the Ministry for the Environment.  |
|                                | Reference:<br>Stats NZ. (May, 2018). Agricultural production statistics: June 2017 (final). Retrieved<br>from https://www.stats.govt.nz/information-releases/agricultural-production-statistics-<br>june-2017-final  |
|                                | Confidential input from the Fertiliser Association of New Zealand.   |
|                                | Ministry for the Environment. (December 2020). <i>Measuring Emissions: A Guide for Organisations</i> . Retrieved from https://www.mfe.govt.nz  |
| Transport                      |  |
| Road and off-<br>road vehicles | Baseline fuel demand from road and off-road vehicles for 2018 was obtained from the Southland Regional Greenhouse Gas Emissions Inventory developed by AECOM.  |
|                                | For on-road light vehicles, historical trends of increasing light vehicle ownership per 1,000 people and decreasing kilometres travelled per light vehicle were extrapolated to 2050. Electric vehicle (EV) uptake projections provided by PowerNet, achieving a 60% share by 2050.  |
|                                | For on-road heavy vehicles, the historical trend of increasing kilometres travelled per<br>heavy vehicle has been extrapolated to 2050. The PowerNet projections for light vehicles<br>were lagged by 5 years and applied to heavy vehicles, reflecting expected timing of cost<br>parity between Internal Combustion Engines (ICE) and electric heavy vehicles, achieving<br>39% share by 2050. |
|                                | Fuel demand from off-road vehicles has been held constant with fuel switching to electric assumed to follow the same trajectory as on-road heavy vehicles.   |
|                                | Fuel demand from buses is held constant to 2050. In 2018, buses accounted for 2.31% of road diesel usage and 0.03% of road petrol usage.   |
|                                | Emission factors are sourced from the Ministry for the Environment.  |
|                                | Reference:<br>AECOM New Zealand Limited. (October 2019). Southland Regional Carbon Footprint<br>2018. Report prepared for Great South.   |
|                                | Confidential input from PowerNet.  |
|                                | Ministry for the Environment. (December 2020). <i>Measuring Emissions: A Guide for Organisations</i> . Retrieved from https://www.mfe.govt.nz  |
| Rail                           | Fuel consumption data for FY19 and FY20 obtained from KiwiRail.  |
|                                | FY20 consumption held constant to 2050.  |
|                                | Emission factors are sourced from the Ministry for the Environment.  |
|                                | Reference:<br>Confidential input from KiwiRail.  |
|                                | Ministry for the Environment. (December 2020). <i>Measuring Emissions: A Guide for Organisations</i> . Retrieved from https://www.mfe.govt.nz  |
| Aviation                       | Flight data was obtained from the Invercargill Airport annual report and Stewart Island<br>Flights website. Small passenger plane flights were excluded from this analysis.  |
|                                | To estimate emissions from these flights, the 2006 IPCC Guidelines for National Greenhouse Gas Inventories methodology and associated emission factors were used to  |

|               | calculate landing and take-off emissions (refer to equations 3.6.3 and 3.6.4 in IPCC report). In-flight emissions are excluded from this analysis.  |
|---------------|---|
|               | Energy demand is projected to increase by 0.7% each year.   |
|               | <u>Reference</u> :<br>Invercargill Airport. Annual Report 2019. Retrieved from<br>https://invercargillairport.co.nz/wp-content/uploads/2019/09/IAL-2019-Annual-<br>Report.pdf   |
|               | Steward Island Flights. Retrieved from https://www.stewartislandflights.co.nz/  |
|               | IPCC. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2.<br>Retrieved from https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html  |
| Shipping      | Two weeks' worth of marine traffic data at Bluff Harbour was obtained from www.marinetraffic.com. The number of ships by type was extrapolated to one year.   |
|               | To estimate emissions, data was segmented into vessel type; passenger, cargo, tanker<br>etc. European Commission guidelines on the quantification of emissions from ships was<br>used to calculate how long the vessel would take to manoeuvre into and out of port. The<br>fuel consumption and emission factors were obtained using Table 3.5.6 in the 2006 IPCC<br>Guidelines for National Greenhouse Gas Inventories. Only in-port emissions were<br>considered in this analysis. |
|               | Energy demand is projected to increase by 0.7% each year.   |
|               | <u>Reference</u> :<br>MarineTraffic. Port of Bluff, New Zealand. Retrieved from<br>https://www.marinetraffic.com/en/ais/details/ports/2689/New_Zealand_port:BLUFF   |
|               | European Commission. Market Survey of Marine Distillates. Retrieved from https://ec.europa.eu/environment/archives/air/pdf/chapter3_end_ship_emissions.pdf  |
|               | IPCC. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2.<br>Retrieved from https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html  |
| Residential   |   |
| Energy demand | Coal and wood demand were obtained from the Southland Regional Greenhouse Gas<br>Emissions Inventory developed by AECOM.  |
|               | Grid electricity demand was obtained from PowerNet's Information Disclosures for the Commerce Commission.   |
|               | LPG usage was obtained from the LPG Association of New Zealand.   |
|               | Projections are in line with population projections for the region. An annual efficiency factor of 0.4% (i.e. an increasing energy/output ratio) is applied to projections.   |
|               | From 2019 to 2050, households are assumed to fuel switch from LPG to electricity at a rate of 1.4% each year.   |
|               | Emission factors are sourced from the Ministry for the Environment.   |
|               | <u>Reference</u> :<br>AECOM New Zealand Limited. (October 2019). Southland Regional Carbon Footprint<br>2018. Report prepared for Great South.  |
|               | PowerNet. Information Disclosure Accounts for The Power Company Limited. Retrieved from https://powernet.co.nz/line-owners/the-power-company-limited/information-disclosure/  |
|               | Confidential input from the LPG Association of New Zealand.   |

|                | Ministry for the Environment. (December 2020). <i>Measuring Emissions: A Guide for</i><br>Organisations, Retrieved from https://www.mfe.govt.nz |
|----------------|---|
| Solar          | Baseline solar generation in Southland was found using Electricity Market Information   |
| generation     | data for the region. This data was forecast to 2050 using the trend published by MBIE in  |
|                | the projections of solar photovoltaic uptake report (2015).   |
|                | Reference   |
|                | Electricity Authority. Electricity Market Information. Installed distributed generation   |
|                | trends. Retrieved from Electricity Authority - EMI (market statistics and tools)  |
|                | (ea.govt.nz)  |
|                | Ministry of Business Innovation and Employment (2015) Projections of Solar Photo-   |
|                | <i>Voltaic Uptake</i> . Retrieved from https://www.mbie.govt.nz/dmsdocument/4258-projects-  |
|                | of-solar-photo-voltaic-uptake   |
| Commercial     |   |
| Enorgy domand  | Crid electricity demand was obtained from DewerNetls Information Disclosures for the  |
| Energy demand  | Commerce Commission.  |
|                |   |
|                | All other demand was obtained from Great South's process heat database which contains   |
|                | a list of boilers in the Southland region.  |
|                | There is expected to be some double counting between the electricity use captured by the  |
|                | boiler database and the Information Disclosures for the Commerce Commission.  |
|                |   |
|                | Projections are in line with regional GDP growth. An annual efficiency factor of -1.3% (i.e.  |
|                | a decreasing energy/output ratio) is applied to projections.  |
|                | Emission factors are sourced from the Ministry for the Environment.   |
|                |   |
|                | <u>Reference:</u><br><u>Rewarklat</u> Information Disclosure Accounts for The Dower Company Limited Detrieved                                   |
|                | from https://nowernet.co.nz/line-owners/the-nower-company-limited/information-  |
|                | disclosure/   |
|                |   |
|                | Great South. Southland Boller Database Sept2020.xisx  |
|                | Ministry for the Environment. (December 2020). Measuring Emissions: A Guide for   |
|                | Organisations. Retrieved from https://www.mfe.govt.nz   |
| Industrial     |   |
| New Zealand    | Energy demand was provided by the New Zealand Aluminium Smelter and held constant   |
| Aluminium      | to 2026. After which demand is set to zero due to the smelter's planned closure.  |
| Smelter (NZAS) |   |
|                | Emission factors are sourced from the Ministry for the Environment.   |
|                | Reference:  |
|                | Ministry for the Environment. (December 2020). <i>Measuring Emissions: A Guide for</i>  |
|                | Organisations. Retrieved from https://www.mfe.govt.nz   |
| Energy demand  | Grid electricity demand was obtained from PowerNet's Information Disclosures for the  |
| (HOIT NZAS)    |   |
|                | All other demand was obtained from Great South's process heat database which contains   |
|                | a list of boilers in the Southland region.  |
|                | There is expected to be some double counting between the electricity use cantured by the  |
|                | boiler database and the Information Disclosures for the Commerce Commission.  |
|                |   |
|                | Projections are in line with regional GDP growth. An annual efficiency factor of -1.7% (i.e.  |
|                |   |
|                | Emission factors are sourced from the Ministry for the Environment.   |
|                | Reference:  |

|                         | PowerNet. Information Disclosure Accounts for The Power Company Limited. Retrieved from https://powernet.co.nz/line-owners/the-power-company-limited/information-disclosure/  |
|-------------------------|---|
|                         | Great South. Southland Boiler Database Sept2020.xlsx  |
|                         | Ministry for the Environment. (December 2020). <i>Measuring Emissions: A Guide for Organisations</i> . Retrieved from https://www.mfe.govt.nz   |
| Coal mining             | Coal production was obtained for the Takitimu, Wairakei and New Vale mines.   |
|                         | An emissions intensity factor of production of 0.0378 tCO $_2$ e / tonne was applied.   |
|                         | Production and therefore emissions were held constant until each mine's planned closure.  |
|                         | Reference:  |
|                         | New Zealand Petroleum & Minerals. Coal - 2018 production figures. Retrieved from  |
|                         | mines/2018-production-figures/  |
| Industrial proces       | ses and product use (IPPU)  |
| New Zealand             | The smelter provided emissions relating to perfluorocarbons, baked anode consumption,   |
| Aluminium               | pitch volatiles, packing coke and soda ash.   |
| Smeller (NZAS)          | Emissions were held constant until 2026, after which emissions are equal to zero due to the smelter's planned closure.  |
|                         |   |
|                         | Reference:<br>Confidential input from the New Zealand Aluminium Smelter.  |
| Product uses as         | Refrigerant use was obtained from the Southland Regional Greenhouse Gas Emissions   |
| substitutes for<br>ODS  | Inventory developed by AECOM. This included refrigeration and air conditioning, foam blowing agents, fire protection and aerosols.  |
|                         | Global Warming Potential values were obtained from the IPCC Fifth Assessment Report.  |
|                         | <u>Reference</u> :<br>AECOM New Zealand Limited. (October 2019). <i>Southland Regional Carbon Footprint</i><br>2018. Report prepared for Great South.   |
|                         | IPCC. (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I,<br>II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate<br>Change. IPCC, Geneva, Switzerland, 151pp   |
| Waste                   |   |
| Solid waste<br>disposal | Historical information regarding solid waste to the Southland Regional Landfill was obtained for the period 2007 to 2019 from the Southland Region Waste Assessment report (July 2020). As the landfill opened in 2005, the waste delivered to the landfill for the years 2005 and 2006 was based on the average over that period. A logarithmic relationship was fitted to historical data and extrapolated to arrive at estimates of waste to landfill through to 2050. |
|                         | The composition of waste was sourced from the Southland Region Waste Assessment report for the period April 2017 to April 2018 and held constant over the modelling period.   |
|                         | Landfill emissions were estimated using a first order decay model. The Global Warming Potential for methane was obtained from the IPCC Fifth Assessment Report.   |
|                         | Landfill gas capture of 250 m <sup>3</sup> / hr is assumed for the site.  |
|                         | <u>Reference</u> :<br>Morrison Low. (July 2020). <i>Southland Region Waste Assessment</i> . Report prepared for the<br>Invercargill City Council, Southland District Council and Gore District Council.   |

|  | IPCC. (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I,<br>II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.<br>IPCC Geneva Switzerland 151nn   |
|--|--|
| Wastewater<br>treatment and<br>discharge | The City Inventory Reporting and Information System (CIRIS) methodology was employed<br>with data sourced from the Southland Regional Greenhouse Gas Emissions Inventory<br>developed by AECOM.  |
|  | The IPCC Fifth Assessment Report was used to obtain Global Warming Potential values.   |
|  | Reference:<br>AECOM New Zealand Limited. (October 2019). Southland Regional Carbon Footprint<br>2018. Report prepared for Great South.   |
|  | IPCC. (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I,<br>II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate<br>Change. IPCC, Geneva, Switzerland, 151pp  |
| Land use, land-us                        | se change and forestry (LULUCF)  |
| Land use                                 | Land use for the Southland region was obtained from the Ministry for the Environment's LUCAS NZ Land Use Map 2016.   |
|  | For each land use class, the steady state soil organic carbon stock, soil carbon stock maturity cycle, reference carbon stock from biomass, annual carbon stock change from biomass and biomass carbon stock maturity cycle was obtained from the Ministry for the Environment. Use of this information follows the Tier 1 guidance in the IPCC guidelines for calculating emissions for organic soils (IPCC, 2006a).  |
|  | Motu (a research institute) modelled the interaction between carbon price and land use<br>change for a report commissioned by the parliamentary commissioner for the<br>environment. The land use output from a conservative carbon price (the Model 7 carbon<br>price projection) was used to model business as usual land use changes out to 2050.   |
|  | This model incorporates the Land Use in Rural New Zealand (LURNZ) model to simulate<br>how major land use sectors (forestry, horticulture, dairy, sheep, and beef farming) change<br>in response to changes in the carbon price. This is driven by two sub-models that are<br>econometrically estimated. The first incorporates national level drivers of change<br>(including commodity prices), while the second is a spatial model determining the spatial<br>location of land use relating to geophysical characteristics of the land (e.g. slope, land use<br>capability) to find proxies for cost of market access and feasibility of conversion. With the<br>spatial projection, the LURNZ model determines land production, associated emissions<br>and in turn profitability of each parcel of land. Changing the carbon price affects the<br>optimal distribution of land. |
|  | <u>Reference</u> :<br>Ministry for the Environment. (2016). <i>LUCAS NZ Land Use Map 2016 v008</i> . Retrieved<br>from https://data.mfe.govt.nz/layer/52375-lucas-nz-land-use-map-1990-2008-2012-<br>2016-v008/  |
|  | Ministry for the Environment. (April 2020). New Zealand's Greenhouse Gas Inventory 1990-2018. Retrieved from https://www.mfe.govt.nz/publications/climate-change/new-zealands-greenhouse-gas-inventory-1990-2018   |
|  | Carbon price and land use change tables provided directly by Levente Timar at Motu.<br>Recent work completed by Motu using the LURNZ model and a complex integrated<br>modelling exercise can be found at https://www.pce.parliament.nz/publications/farms-<br>forests-and-fossil-fuels-the-next-great-landscape-transformation  |
| MITIGATION ASS                           | UMPTIONS   |
| Agriculture                              |  |
| Stock reduction                          | Stock reduction is modelled as 10% of livestock to be reduced 2035 to 2050.  |
|  | This relied on stock unit conversion factors that were sourced from table 2.3 in Land-use intensity and GHG in the LURNZ Model report (2014).  |

|  | This stock reduction assumed a linear decrease. This model assumes a constant profit per head of livestock, with profitability extracted from DairyNZ and Beef + Lamb NZ reports.  |
|--|--|
|  | Emission factors remain the same as under business as usual  |
|  | Reference:   |
|  | Motu Economic and Public Policy Research. (2014). <i>Land-use Intensity and Greenhouse Gas Emissions in the LURNZ Model</i> .  |
|  | AgFirst. (August, 2017). Analysis of drivers and barriers to land use change. A Report   |
| Selective<br>breeding                      | Assumptions are based on the 2015 Meat & Livestock Australia report titled A marginal abatement cost analysis of practice options related to the NLMP program.   |
|  | A key assumption is that the cost of implementing selective breeding is zero on the basis<br>that many producers already use systems that incorporate emissions reductions and the<br>cost of purchasing livestock based on low residual methane production is not materially<br>different to selection based on other traits.   |
|  | Reference:   |
|  | Meat & Livestock Australia. (2015). A marginal abatement cost analysis of practice options related to the NLMP program. Retrieved from https://www.mla.com.au  |
| Biofuel capture<br>from effluent           | Parameters are primarily based on an anerobic digestion feasibility assessment done in cooperation with Great South and information supplied by Dairy Green Ltd (John Scandrett), which is based upon the Glenarlea Farms (Isla Bank) Biogas from Effluent project in Southland.   |
|  | By 2050, biofuel capture from dairy cattle effluent is projected to occur at 165 farms with pasture only (and 8.25% of manure collected), 215 farms with a stand-off area (and 18.25% of manure collected) and 50 farms with wintering sheds (and 23.5% of manure collected).  |
|  | It is assumed that all energy generated is used on farm, avoiding both electricity and hot water costs.  |
| Transport                                  |  |
| Light vehicle<br>transition to<br>electric | 92% of the fleet is assumed to be electric by 2050. This analysis included consideration of the lifecycle of cars, projected fuel efficiency in both ICE vehicles and EVs, capital investment of vehicles and public charging infrastructure.  |
|  | Efficiency rates, capital costs and lifecycle were sourced from Ministry for the Environment's Marginal abatement cost curves analysis for New Zealand: Potential greenhouse gas mitigation options and their costs. The cost is the difference in cost between EVs and ICE vehicles, i.e. the cost to purchase EV and power it (using annual km travelled as per BAU forecast) alongside infrastructure cost, against the cost that would've gone to buying an ICE and fuelling it (using annual km travelled as per BAU forecast). |
|  | Equations to cost light electric vehicles  |
|  | # EV from baseline × $\left( \text{Electricityprice} \left( \frac{\$}{\text{kWh}} \right) \times \left( \frac{\kappa \text{Wn}}{\text{km}} \right) \times \frac{\kappa \text{m travelled}}{\text{year}} + \text{CapEx} \right)$  |
|  | # ICE from baseline × $\left( \text{Fuelprice}\left(\frac{\$}{L}\right) \times \left(\frac{L}{km}\right) \times \frac{\text{km travelled}}{\text{year}} + \text{CapEx} \right)$  |
|  | + Difference in Lifecycle Costs + Infrastructure Costs   |
|  | The change in emissions were found by looking at the difference in emissions caused from the fuel switch. Battery emissions were excluded from this analysis.  |
|  | Emission factors remain the same as under business as usual.   |
|  | Reference:   |

|               | Ministry for the Environment. (2020). <i>Marginal abatement cost curves analysis for New Zealand</i> . Retrieved from https://mfe.govt.nz |
|---------------|---|
| Heavy vehicle | 60% of the fleet is assumed to be powered by hydrogen fuel cells by 2050. Given the large   |
| transition to | uncertainty in hydrogen fuel prices, a total cost ownership (\$/km) using (Deloitte, 2020)  |
| hydrogen      | (Ara Ake, 2020) values were used.   |
|               | The forecast kWb values were extracted from the Ministry for Environment's efficiency   |
|               | factor for heavy electric vehicles in the MACC analysis and multiplied these by a scalar to   |
|               | incorporate the additional energy inefficiencies from FCEV.   |
|               |   |
|               | Emissions were found by looking at the difference in emissions from fuel consumption,   |
|               | using the same emission factors as under business as usual.   |
|               | Battery emissions were excluded from the analysis.  |
|               |   |
|               | Reference:  |
|               | Ara Ake. (2020). Economics of using green hydrogen to decarbonise long-distance heavy   |
|               | freight in New Zealand: Stage 1 review of existing studies.   |
|               | Deloitte, (2020), Evelling the future of mobility hydrogen and fuel cell solutions for  |
|               | transportation.   |
|               |   |
|               | Ministry for the Environment. (2020). Marginal abatement cost curves analysis for New   |
| Mode shift    | 2018 census data on the main means of travel to work for the region was obtained from   |
| (cycling and  | Stats NZ.   |
| walking)      |   |
|               | It was assumed that 30% of commuters live less than 5km from work, lower than the   |
|               | national average of 47% (taken from 2006 Stats NZ national data).   |
|               | Combining these sources allowed us to estimate the proportion of commuters that live  |
|               | less than 5km from work and still commute by car.   |
|               |   |
|               | It is assumed that modal shift is occurring after EV switch.  |
|               | The avoided fuel consumption and fuel costs were then calculated to determine the   |
|               | abatement potential and cost savings.   |
|               | Peference:  |
|               | Stats NZ, 2018 Census - Main means of travel to work and work status by status in   |
|               | employment. Retrieved from  |
|               | http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE8296  |
| Residential   |   |
| Snace beating | 20% of residential dwellings were assumed to already have insulation and double-glazed  |
| improvements  | windows.  |
| ,             |   |
|               | The number of occupied dwellings was sourced from census data from Stats NZ.  |
|               | The cost of insulation was taken from an NZ energy insulation quote site (Awarua  |
|               | Synergy).   |
|               |   |
|               | The expected energy efficiency was taken from a University Otago report Monitoring  |
|               | Energy Enrolency opgrades in State Houses in Southern New Zealand.  |
|               | The percent of electricity and coal used in spatial heating was taken from EECA. and from   |
|               | this the energy saved was calculated.   |
|               |   |
|               | and emission savings  |
|               |   |
|               | Reference:  |

|                         | Stats NZ. 2018 Census - Occupied dwellings, unoccupied dwellings, and dwellings under<br>construction, for private and non-private dwellings. Retrieved from<br>http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE8296<br>Awarua Synergy. (October, 2019). Cost of insulation. Retrieved from |
|-------------------------|---|
|                         | insulation-install-costs/   |
|                         | University of Otago. (2006). <i>Monitoring of Energy Efficiency Upgrades in State Houses in southern New Zealand</i> . A research project by the Energy Management Group Physics Department – University of Otago. Retrieved from https://www.physics.otago.ac.nz   |
|                         | EECA. Energy end use database. Retrieved from https://tools.eeca.govt.nz/energy-end-<br>use-database/   |
| Commercial and I        | ndustrial   |
| Boiler fuel<br>switch   | The CapEx and efficiency ratings of new boilers by fuel type were taken from the Ministry for the Environment's MACC analysis and amended by Grant Smith.   |
|                         | Fuel prices are sourced from MBIE.  |
|                         | Great South's process heat database includes the age of the boiler, boiler capacity, energy use, sector and fuel type.  |
|                         | It was assumed that boilers are converted at the asset end of life. A default boiler life of 25 years was assumed. Some boilers are switching earlier, as informed by Great South.  |
|                         | Capital costs for all options are assumed to scale linearly with capacity and fixed, uniform prices for the different fuel types were assumed.  |
|                         | For conversion, the following logic was applied: any boiler conversions pre-2025 are either<br>to pellets or biomass, then post-2025 small commercial boilers (<250 kW) to electricity,<br>small industrial boilers (<500 kW) to pellets and all other boilers to biomass.                                      |
|                         | The cost is calculated as the difference in cost between replacing the existing boiler with<br>the same boiler fuel type and paying for the fuel versus buying the new boiler and<br>purchasing the new fuel.   |
|                         | Emission factors are the same as BAU.   |
|                         | <u>Reference</u> :<br>Ministry for the Environment. (2020). <i>Marginal abatement cost curves analysis for New Zealand</i> . Retrieved from https://mfe.govt.nz   |
|                         | Ministry of Business, Innovation & Employment. (December, 2020). <i>Energy Prices – Price data tables (excel)</i> . Retrieved from https://www.mbie.govt.nz   |
| Waste                   |   |
| Landfill gas<br>capture | A 400kW system (at 30% efficiency) is assumed to be installed at the landfill, increasing the capture rate from 250 m3 / hr under BAU to 500 m3 / hr.   |
|                         | The Landfill Gas Energy Cost Model (version 3.4, October 2020) developed by the US EPA Landfill Methane Outreach Program was used to cost the project. A standard engine project type is assumed.   |
|                         | Given the existing system already on site, it is assumed that 100% of the electricity generated is exported to the grid and not consumed on site.   |
|                         | Reference:<br>United States Environmental Protection Agency. (October, 2020). Landfill Gas Energy<br>Cost Model - Landfill Methane Outreach Program. Version 3.4. Retrieved from  |
| Food waste to           | The assumptions are based on the first large-scale food waste-to-bioenergy plant in New Zealand, the EcoGas Reporce biogas plant  |

|   | The annual volume of feedstock received at the plant is assumed to be 10,000 tonnes.  |  |  |
|---|---|--|--|
|   | For modelling purposes, the energy generated is assumed to displace electricity consumption.  |  |  |
|   | <u>Reference</u> :<br>Smith, G. (March, 2021). <i>Waste to Energy Notes</i> . Powerpoint Presentation prepared for<br>Great South.  |  |  |
| Land use, land-use change and forestry (LULUCF) |   |  |  |
| Land<br>conversion to<br>forestry               | Motu's model leveraging the LURNZ model (used to predict business as usual LULUCF emissions) was run at a higher carbon price (the Model 9 carbon price projection) for this mitigation option.   |  |  |
|   | The additional hectares of land converted from low producing land to forestry as a result of the higher carbon price were included in this option. This resulted in a 7% net conversion to forestry from 2020 to 2050; 50% was assumed native while 50% was assumed to be pine forest that was harvested after 25 years.  |  |  |
|   | The age of the plantation was accounted for and the sequestration rate by age found in the Ministry for the Environment MACC analysis, which is also in line with the New Zealand Emissions Trading Scheme (NZ ETS).  |  |  |
|   | To cost this option, the cost of converting land came from a report prepared for the Ministry of Primary Industries titled Carbon sequestration potential of non-ETS land on farms. The cash flow each year was taken from Forest Opportunities released by crown research institute scion. The cash flow includes planting, insurance and pruning costs. For pine forests a revenue stream from harvest was also included, whereas this was excluded from native plantations. The cost foregone was calculated as the hectares of land that had been converted multiplied by the EBIT of that land using data from Beef + Lamb NZ and DairyNZ. |  |  |
|   | To account for changes in carbon, the carbon sequestered from the increase in planting<br>used age-based sequestration tables, accounting for the age of the tree and how much<br>carbon it would sequester in that year. Alongside the biomass sequestration, changes in<br>soil sequestration were accounted for. The change in biomass and soil stock used the<br>carbon tables and equations obtained from the Ministry for the Environment.  |  |  |
|   | The loss in emissions from lower livestock numbers were also included in this analysis by scaling the number of animals by the change in farmland available compared with business as usual.  |  |  |
|   | <u>Reference</u> :<br>Ministry for the Environment. (2020). <i>Marginal abatement cost curves analysis for New Zealand</i> . Retrieved from https://mfe.govt.nz   |  |  |
|   | Burrows et al. (September, 2018). <i>Carbon sequestration potential of non-ETS land on farms</i> . Prepared for Ministry for Primary Industries. Retrieved from https://www.mpi.govt.nz   |  |  |
|   | Ministry for Primary Industries. <i>Farm monitoring</i> . Retrieved from https://www.mpi.govt.nz/resources-and-forms/economic-intelligence/farm-monitoring/   |  |  |
|   | AgFirst. (August, 2017). <i>Analysis of drivers and barriers to land use change</i> . A Report prepared for the Ministry for Primary Industries. Retrieved from https://www.mpi.govt.nz   |  |  |

|                | Ministry for the Environment. (April, 2020). New Zealand's Greenhouse Gas Inventory   |
|----------------|---|
|                | 1990-2018. Retrieved from https://www.mfe.govt.nz/publications/climate-change/new-  |
|                | zealands-greenhouse-gas-inventory-1990-2018   |
|                | <b>.</b>  |
|                | Carbon price and land use change tables provided directly by Levente Timar at Motu.   |
|                | Recent work completed by Motu using the LURNZ model and a complex integrated  |
|                | modelling exercise can be found at https://www.pce.parliament.nz/publications/farms-  |
|                | forests-and-fossil-fuels-the-next-great-landscape-transformation  |
| LIVESTOCK to   | I ne model used to predict business as usual LULUCF emissions was run at a higher carbon  |
| borticulturo   | price for this mitigation option. The adultional nectares of fand converted from high   |
| norticulture   | producing failu to cropiallu as a result of the higher carbon price were included in this action. This accumed a 4.1% not conversion to crops and particulture from 2020 to 20E0. |
|                |   |
|                | To cost this option, the cost of converting land and expected appual FBIT came from the   |
|                | report titled Analysis of drivers and harriers to land use change prepared by MPL and   |
|                | agriculture and horticulture statistics from Stats NZ   |
|                |   |
|                | To account for changes in carbon, the changes in biomass and soil from changing between   |
|                | high producing land to cropland were accounted for.   |
|                |   |
|                | The loss in emissions from lower livestock numbers were also included in this analysis by   |
|                | scaling the number of animals by the change in farmland available compared with business  |
|                | as usual.   |
|                |   |
|                | Reference:  |
|                | Agrirst. (August, 2017). Analysis of drivers and barriers to land use change. A Report  |
|                | prepared for the Ministry for Primary industries. Retrieved from https://www.mpi.govt.nz  |
|                | Carbon price and land use change tables provided directly by Levente Timar at Motu  |
|                | Recent work completed by Motu using the LURNZ model and a complex integrated  |
|                | modelling exercise can be found at https://www.pce.parliament.pz/publications/farms-  |
|                | forests-and-fossil-fuels-the-next-great-landscape-transformation  |
| Riparian       | To model for riparian planting 56,500ha of high producing land, 6,500 ha of low producing   |
| planting       | land and 2,000ha of woody biomass land was linearly converted from 2020 to 2050 to  |
| , ,            | Natural forest and woody biomass (50% split). These figures were supplied by Great South.   |
|                |   |
|                | The change in carbon associated with the biomass and soil was accounted for using the   |
|                | steady state soil organic carbon stock, soil carbon stock maturity cycle, reference carbon  |
|                | stock from biomass, annual carbon stock change from biomass and biomass carbon stock  |
|                | maturity cycle obtained from the Ministry for the Environment.  |
|                | The cost of conversion took an average across DairyNZ actimates and a Landsare recearsh   |
|                | report titled Cost and Reports of Piparian Ruffers in NZ. These costs exclude pon-financial   |
|                | henefits such as cleaner rivers and lower erosion   |
|                | benefits such as cleaner rivers and lower crosion.  |
|                | This land conversion impacted livestock numbers and the associated change in agriculture  |
|                | revenue and emissions were included in this analysis.   |
|                |   |
|                | <u>Reference</u> :  |
|                | Ministry for the Environment. (April, 2020). New Zealand's Greenhouse Gas Inventory   |
|                | 1990-2018. Retrieved from https://www.mfe.govt.nz/publications/climate-change/new-  |
|                | zealands-greennouse-gas-inventory-1990-2018   |
|                | AgEirst (August 2017) Applysis of drivers and harriers to land use change A Deport  |
|                | nrenared for the Ministry for Primary Industries. Retrieved from https://www.mpi.govt.nz  |
|                | propared for the ministry for Frindry industries. Netheved from https://www.mpi.govt.nz   |
|                | Landcare Research. (September, 2016). Cost and Benefits of Riparian Buffers in NZ.  |
|                | Retrieved from https://www.landcareresearch.co.nz/uploads/public/Events/Link-   |
|                | series/Riparian_Restoration_Cost_Benefit_Analysis.pdf   |
| PCL land       | 1,500ha of high producing grassland, 18,500ha of low producing grassland and 4,500 ha   |
| transformation | of woody biomass was converted to natural forest.   |
| 1              |   |

| This conversion was not on farmland and in turn, did not reduce livestock numbers/agriculture emissions and costs associated with foregone agriculture profit (seen in land conversion to forestry option).  |
|--|
| To cost this option, the cost of converting grassland to forestry came from a report<br>prepared for the Ministry of Primary Industries titled Carbon sequestration potential of<br>non-ETS land on farms.   |
| The cash flow each year was taken from research released by crown research institute<br>Scion. The cash flow includes planting, insurance and pruning costs. As natural forest on<br>PCL is not expected to be harvested, no harvest revenue was included in this analysis.  |
| To account for changes in carbon, the carbon sequestered from the increase in planting<br>used age-based sequestration tables, accounting for the age of the tree and how much<br>carbon it would sequester in that year. Alongside the biomass sequestration, changes in<br>soil sequestration were accounted for. The change in biomass and soil stock used the<br>carbon tables and equations obtained from the Ministry for the Environment. |
| <u>Reference</u> :<br>Burrows et al. (September 2018). <i>Carbon sequestration potential of non-ETS land on farms</i> . Prepared for Ministry for Primary Industries. Retrieved from https://www.mpi.govt.nz   |
| Ministry for the Environment. (April, 2020). New Zealand's Greenhouse Gas Inventory 1990-2018. Retrieved from https://www.mfe.govt.nz/publications/climate-change/new-zealands-greenhouse-gas-inventory-1990-2018  |

# Appendix B Physical Risks and Resulting Economic Impact Analysis

A high level sub-regional breakdown consolidating research from NIWA and Statistics New Zealand is provided in the following pages. The NIWA report predicts Southland's climate to 2100 using climate markers such as temperature, precipitation and rain frequency. This analysis used four Representation Concentration Pathway (RCP) scenarios, which indicate the increase in radiative force compared to pre-industrial values. All scenarios are possible, depending on how little action is taken to mitigate GHG emissions. The most significant impacts under the RCP8.5 scenario are considered in the analysis below, aligning to 3-4°C of warming by 2100, significantly over the goals set under the Paris Agreement and the Zero Carbon Act.

High level sub-regional summaries are presented on the following pages and focus on the physical changes in the climate that will have the biggest local economic impact.

## Fiordland and Islands

### Economic overview

Fiordland and Islands is dominated by the tourism sector, accounting for 85% of GDP annually.

With 907,786 visitors in 2019 to Milford Sounds Fiordland National Park<sup>21</sup>, highlighting the importance of nature in attracting tourists.

#### Main physical risks

#### Increased flood risk.

Increased number of heavy rain days.

Largest increase in precipitation in winter (above 40%) by 2090.

#### Main economic impacts

Damage to infrastructure from flooding and landslides.

Flooding and flooding damage affecting tourism as people unable to access Fiordland or become stranded in Fiordland.



Figure 10: Fiordland and Islands FMU/sub-region highlighted.

## Waiau

#### Economic overview

Southern Waiau is dominated by the agriculture and tourism industry. The region has seen a shift towards dairy farming in the past decade. Northern Waiau, around Te Anau, relies predominantly on Tourism.

#### Main physical risks

Increased risk of drought in Northern Waiau with 10% decrease in precipitation forecast for summer months by 2090.

### Main economic impacts

Heat stress to livestock reducing productivity. Drought increasing irrigation costs and fire risk for the forestry sector. Low rainfall also reduces growth rates, affecting forestry productivity and pasture fertility.



Waiau

Projected climate change

+30 hot days >25 °C

Annual rainfall expected

+3.0°C by 2100 in

Northern Waiau

to increase

Figure 11: Waiau FMU/subregion highlighted.

<sup>&</sup>lt;sup>21</sup> (DOC, 2020)

## Aparima

#### Economic overview

Aparima has strong reliance on the dairy industry, contributing 48% of GDP.

A recent survey of 151 Aparima farmers showed 80% have Farm Environment Plans<sup>22</sup>, outlining the relevance of identify specific climate risk for the sub-region.

#### Main physical risks

Increased flood risk across Northern Aparima.

Increased heatwave days and dry days across catchment.

### Main economic impacts

Heat stress to livestock reducing productivity.

Increased chance of pasture damage from flooding, which in turn reduces the profitability of farms.





Figure 12: Aparima FMU/subregion highlighted.

# Ōreti

#### Economic overview

Ōreti's GDP is not dominated by one sector. The large population has created a strong services industry with finance, utilities and other services each contributing between 15-22% of sub-regional GDP.

### Main physical risks

Increase in temperature and increase in the risk of drought for Northern Ōreti.

### Main economic impacts

Northern Ōreti faces the risk of drought affecting livestock and the cost of farming (particularly through increased irrigation requirements and feeding costs).



Ōreti

Projected climate change

+30 hot days/year >25 °C

Increased wet days in the north

Increased risk of drought

+3.0°C by 2100 in Norther Ōreti

Figure 13: Ōreti FMU/subregion highlighted.

<sup>&</sup>lt;sup>22</sup> (DairyNZ, 2020)

## Matāura

#### Economic overview

Matāura's primary source of GDP is from dairy and beef cattle farming, which together contributes around 29% of GDP.

| Mataura<br>Projected climate change |  |
|-------------------------------------|--|
| l                                   | +3.0°C in northern<br>Matāura                |
| ☀                                   | +55 hot days northern<br>Matāura/year >35 °C |
| <b>•••</b>                          | Increased flood risk                         |
| -                                   | Increased drought risk                       |
|                                     |  |

#### Main physical risks

Increased flood risk.

Significant increases for water required for pasture growth in northern region.

#### Main economic impacts

Flood impacts to dairy industry by requiring mass relocation of livestock to higher ground and tankers unable to access farms to collect milk.

Significant cost in irrigation to ensure pasture growth not constrained by water shortage.



Figure 14: Matāura FMU/sub-region highlighted.

# Appendix C Sectoral Analysis of Climate Change Risks and Opportunities

EY conducted an analysis of the key climate change risks and opportunities for the Southland economy's four largest sectors; agriculture, finance, tourism and utilities. This analysis shows that all sectors benefit from acting early to implement emissions reduction measures. Acting early will build resilience, provide economic benefit, create new markets and position the Southland region as a green economy which in turn may attract sustainable tourism and create a competitive advantage for local production.

Lowering emissions in Southland will also help to mitigate the physical risks outlined in the previous section of this report. Each sector's risks and opportunities have been categorised under a business as usual (BAU), which aligns to a 3-4°C warming scenario, and a 1.5-degree scenario (1.5DS). The results show that all sectors are at greater risk under business as usual than under a 1.5-degree scenario.

## Business as usual

Assumes that all current and committed global climate and energy policy settings are implemented. Under this scenario, global greenhouse gas emissions continue to increase over time, and the physical impacts of climate change are more significant. This aligns with between three and four degree of warming from climate change by 2100.

## 1.5-degree scenario

Further policy setting is enabled globally and locally that maintains the increase in global temperatures to within 1.5°C of preindustrial levels. Under this scenario, global greenhouse gas emissions will peak before significantly decreasing over coming decades, reaching net zero greenhouse gas emissions in the second half of the century. Whilst the physical impacts of climate change occur, they are less significant under this scenario. It also incorporates assumptions relating to uptake of new technologies and transition to clean energy sources.

The results of this analysis are presented on the following pages.

Climate change risks and opportunities in the agriculture sector


Climate change risks and opportunities in the tourism sector



Climate change risks and opportunities in the finance and insurance sector



E

products

Đ



Climate change risks and opportunities in the utilities sector

## Appendix D Disclaimer

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# Submission on Transitioning to a low-emissions and climate-resilient future

**Grey** Power

### Introduction

This submission is made on behalf of the Grey Power New Zealand Federation Inc.

The Grey Power New Zealand Federation (GPF) is a non-sectarian and non-party political, advocacy organisation that aims to advance, promote and protect the welfare and well-being of older people. Made up of some 75 individual Associations with an overall membership of approximately 60,000, GPF is the premier organisation representing older New Zealanders.

Although our members personal views cover the political spectrum, we are united in concern for our mokopuna and the world we leave to them. We consider that addressing the causes of anthropogenic climate change is essential. We consider that the driver for change and the rate of change to the way we live must be the cumulative effects on our environment. Recognising that the kind and rate of change required will be at best uncomfortable and potentially disruptive, we nonetheless consider as older people that it is our duty to set an example and accept responsibility for the outcomes that have resulted from the political and economic decisions we have supported in the past, and not to leave the cost of action or inaction to our mangainga.

We wish to be heard in support of our submission.



### **Detailed responses**

We have as requested structured our responses around the questions posed in the discussion document.

1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not.

We wholeheartedly support a principled approach. We agree that the five principles set out are appropriate. In particular we consider that an equitable approach is essential. We recognise that it although the causes of anthropogenic climate change has long roots, it is the decisions and choices made over the last seventy years that have raised this to a level that has fundamental implications for our descendants and the world they inherit. Having benefitted from the material gains generated by an open ended plundering of natural resources, there is no possible moral justification in avoiding the costs that now need to be met.

We consider that the cost of addressing climate change must be born in proportion to the benefit received from the processes leading to its cause. We believe that in addition to a realistic carbon price, this can only be achieved by fully accounting for externalities in all business transactions. In particular, and with special emphasis to New Zealand is that it is no longer acceptable to utilise a public good for private gain, whether as input to a process or as a means of waste disposal without compensating the public purse. We recognise that such an approach, and the transition to a circular and regenerative economy it would enable will be disruptive and that industries that have based their commercial model on such exploitation will face dealing with stranded assets and may not survive. We consider the results of this further in the following sections.

2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

As noted in the discussion document, we consider that the greatest barriers to private sector action is the focus on short term returns to investors as the primary consideration for most companies. We note and agree that investment in low emission processes and re-generative practices has benefits beyond the immediate reduction in emissions and through lower operating costs more than offsets any initial CAPEX. The role of Government here is we believe both educational, and directive. Constraints on the use of natural resources beyond the local capacity to regenerate is necessary and implicit in any circular economy, but without appropriate Government imposed pricing and regulatory control, we do not believe that the required change in approach will occur. A further factor that is specific to New Zealand is the continued emphasis in the primary sector on maximising production rather than adding value. We note that currently whilst there is a nationwide shortage of building materials, and the rest of the world is embracing engineered wood as a sustainable alternative to steel in commercial and high rise buildings, New Zealand forestry products continue to be exported as a low end commodity. Covid 19 has already demonstrated the fragility of a global just in time supply chain. We consider the recreation of much of the indigenous industry lost in the push for globalisation over the last forty years would have major benefits both environmentally, socially and economically. Again this will need both positive and negative incentives at Government level to bring it about.

3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

We can offer no particular insights beyond those we have mentioned above.

4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

We consider that a whole of systems approach is required to create a fundamental change in the way the natural environment is perceived. We suggest that an approach based on Maturanga Māori

recognising that people are an integral part of the natural world and that we cannot through a system of property rights continue to exploit natural resources without consequence, is necessary. We consider that working within the Kaupapa of te Tiriti and te Ao Māori will help society to develop a sense of Kaitiakitanga that recognises the wider values of the natural environment in the same way as the recognition of te Mana o te wai as the primary objective in the NPS-FM.

5. Are there any other views you wish to share in relation to the Transition Pathway

We wholeheartedly endorse wellbeing as the most appropriate overall metric of success

Although we recognise the necessity for a phased approach, we feel that the extent to which the proposed pathway relies on the purchase of offshore credits to meet the goals set is inconsistent with the principled approach advocated and the principles explicitly stated. Similarly, although offsetting through carbon sequestration within NZ is a valid pathway to a net zero emission profile, unless an end use that maximises the life of the timber produced is incorporated, this too can only be a short term solution, albeit short in this case applies to the growth pattern of trees rather than a human viewpoint.

### Helping sectors adapt

6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

We consider that prioritising active mode transport infrastructure and facilitating micro mobility for 'last mile' journeys to be critical to adaptation as well as contributing directly through mode shift to reduced emissions. We cite overseas experience that adaptation of existing transport corridors, providing there is physical separation from vehicular traffic and a contiguous network, is very effective in reducing emissions, but that experience in NZ suggests that infrastructure adaptation needs to lead not follow demand.

7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

The current lack of redundancy in the national Grid and regional reticulation networks is a major risk factor given the increasing reliance on electricity as the primary energy source in a low carbon future. Although we do not consider this a direct risk in terms of increasing the impact of climate change we consider it a major risk factor to the success of emission reduction. We cover this in more detail later.

### Working with our Tiriti Partners

8. The Climate Change Commission has recommended that the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. Which, if any, of the strategies listed are a particular priority for your whānau, hapū or iwi and why is this?

As predominately Tangata te Tiriti we consider that the inclusion of maturanga Maori and incorporation of the rights of Tangata Whenua under te Tiriti as fundamental. Although we are not qualified to recommend, we believe that te Ao Māori, kaitiakitanga and Maturanga Maori align with

the concepts of regenerative agriculture, a circular economy, and a systems approach. We suggest therefore that these would be suitable priority areas for partnership.

9. What actions should a Māori-led transition strategy prioritise? What impact do you think these actions will have for Māori generally or for our emission reduction targets? What impact will these actions have for you?

#### We have no right to comment here

10. What would help your whānau, community, Māori collective or business to participate in the development of the strategy?

#### NA

11. What information would your Māori collective, community or business like to capture in an emissions profile? Could this information support emissions reductions at a whānau level?

### NA

12. Reflecting on the Commission's recommendation for a mechanism that would build strong Te Tiriti partnerships, what existing models of partnership are you aware of that have resulted in good outcomes for Māori? Why were they effective.

We understand that the approach adopted by te Whanganui a Tara Whaitua committee when considering the future of water in their area was successful in delivering complementary reports that were mutually supportive and shared a common vision for the future of our awa. This resulted from the adoption by the committee from the beginning of a partnership approach, acknowledgement of rights and responsibilities under te Tiriti, and acceptance that Maturanga Maori and Western reductive science were complementary not competing world views.

### Making an equitable transition

13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included

We fully support the Commission's objective, in particular the need for robust planning. Our only comment would be regarding the minimisation of unequal impacts. We would not wish this principle used to justify any diminution of economic cost to businesses of maintaining practices that are known to exacerbate emissions. There are some businesses and business practices that need to be eliminated and this needs to be achieved through both regulation and economic price signals. The be truly equitable the cost to business must be proportionate to the damage caused by their operation, not the cost to them of transitioning.

14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission, and any other objectives that you think should be included in an Equitable Transitions Strategy?

We consider that the groups identified by the Commission are appropriate but are concerned that with the exception of disability community and community groups, all those identified are associated principally with the paid work economy. We consider that the impact of transition, and especially of any delay in transition will once again be born principally by the public good and the natural environment. We therefore consider that the groups identified should be extended to include environmental advocacy groups, and since any economic impact both long and short term will be felt most keenly by those on fixed incomes, advocacy groups such as CPAG and Grey Power should also be included.

15. What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?

We question the premise implied here. It is clear that in any transition of the kind required, which will inevitably disrupt existing practices and potentially strand entire industries, that the perspective and priorities of all concerned are never going to align. We consider that the primary purpose of the wide ranging collection of actors identified above is to agree objectives. We suggest that whilst those groups representing non commercial actors may also reach a consensus on cost allocation and equity, it is unlikely that any commercial actor will voluntarily approve measure that will economically favour competing actors or otherwise disadvantage themselves to achieve an outcome perceived as equitable by an external agent. We suggest that once objectives are agreed, equity in cost should be achieved through regulation or directly through mechanisms such as carbon pricing. Please see also the response below.

16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

The greatest contribution to emissions by low income families is likely to be from transport, waste streams and excessive energy use caused by inadequate and unhealthy homes. Low income families in most of NZ typically have little or no access to public transport and are forced to rely on private vehicles that would be uneconomic to run or banned outright in Europe. Housing stock, particularly rental accommodation where low income families predominate, is of poor quality and poorly maintained. The high level of reliance of low income families on food, heating and transport services that minimise capital outlay comes at the cost of inefficiency, increased carbon footprint and elevated running costs.

Although behavioural change remains a necessary process, financial barriers are paramount.

We note that for these homes, energy-related expenditures constitutes both a proportionately larger share of their budget, and in many cases a larger cost in absolute terms, due to low efficiency appliances and poor quality housing. They also have little or no ability to make the capital expense needed to adapt to higher energy prices such as more energy-efficient appliances or home-heating systems. We therefore consider that the most effective intervention at Government level to assist low income homes reduce their carbon footprint would be through direct financial assistance to address these issues, financed from a realistic carbon tax.

We endorse the suggested mechanisms outlined in the paper 'The Design and Implementation of Policies to Protect Low-Income Households under a carbon tax'<sup>1</sup> to remove barriers to accessing more efficient but capital heavy options.

<sup>&</sup>lt;sup>1</sup> Chad Stone, 2015, The Design and Implementation of Policies to Protect Low-Income Households under a carbon tax, Center on Budget and Policy Priorities

We further note that despite the improvements mandated under the Healthy Homes legislation, the lack of security of tenure remains as a major disincentive to tenants to themselves invest in improvements to their home that would reduce both their costs and carbon footprint. We therefore also consider enabling a transition to a rental market based on secure long term tenure as a major beneficial intervention at policy level.

We also note that current policy settings effectively exclude many older people on low and fixed incomes from accessing insulation and similar grants because the worth of their home is considered when assessing eligibility. We do not argue that wealth should not be considered but point out that this particular circumstance it is self-defeating, with the effect that an applicant cannot access the grant to improve their home but neither can they access the wealth that excludes them to pay for the improvement directly.

17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

#### NA

18. What additional resources, tools and information are needed to support community transition planning?

We suggest an emphasis on transport and housing policies that work synergistically to build resilient communities and minimise travel.

19. How could the uptake of low-emissions business models and production methods be best encouraged?

Through market signals based on an effective and universal carbon tax. We do not believe that it is in anyone's long term interests to create exceptions, and note much of the current transitional problems would have been avoided if agricultural emissions had not been excluded from the ETS in 2013 and the access to offshore credits limited.

We consider the recent purchase of offshore credits by the Government to limit price rises short sighted and counter productive.

20. Is there anything else you wish to share in relation to making an equitable transition?

-NA

### Aligning systems and tools

21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

Since it is a fundamental principle of our parliamentary system that a current Government cannot bind a future, it is difficult to determine a constitutional mechanism that would truly hold a Government to account outside the triennial election cycle. Which is why we consider that an model based on the UK climate change commission is preferable.

22. How can new ways of working together, like mission-oriented innovation, help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climate-resilient economy?

The question is perhaps not how these methods can help, but rather how can we ensure they are adopted when the hierarchical and siloed approach is endemic in both business and Government.

We suggest that this is something that may best be addressed through partnering with Tangata Whenua and adopting an approach based on te Ao Māori.

23. Is there anything else you wish to share in relation to government accountability and coordination?

NA

### **Funding and financing**

24. What are the main barriers or gaps that affect the flow of private capital into lowemissions investment in Aotearoa?

We would opine that this is dominated by the short term investment horizon typical in most NZ businesses and a belief that high dividends are necessary to secure capital.

25. What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?

We cannot comment here.

26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

We consider that Govt funding should prioitise infrastructure changes that preference low emission activities and constrain those that have high emissions. The prime example being extending the Rail network including the end to end electrification of the main trunk line and the re-opening of other lines to passenger traffic. Mass rapid transit systems whether heavy rail, light rail or dedicated lane bus must be given priority. Similarly the re-purposing of road corridor space from light vehicles to active mode transport.

27. Is there anything else you wish to share in relation to funding and financing?

NA

### **Emissions pricing**

28. Do you have sufficient information on future emissions price paths to inform your investment decisions?

NA

29. What emissions price are you factoring into your investment decisions?

NA

30. Do you agree the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

Yes. We share the concerns of the CCC that the ETS discourages direct (gross) reduction. We agree that limiting offset forestry credits to a one off based on permanent forests rather than those

planted as a crop and a sinking cap on the percentage of emissions able to be offset should be included. We also have major concerns about the use of off shore credits and consider that if these are continued to be available they should attract a Govt imposed price premium to discourage their use.

31. What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider to ensure we do not unnecessarily restrict forest planting?

We suggest that this can best be addressed by taking a whole of system view. Whilst all forests develop sequestration at a maximum during their growth phase, it is creating a mechanism that facilitates long term storage that is the issue. Permanent forests eg based on endemic reafforestation of marginal hill country currently used for softwood forestry into a commodity market is one route, but we would suggest that an alternative is the use of cropped trees in engineered wood as a replacement in buildings for steel and concrete would create a permanent a carbon sink, and provide a long term growth path for the industry.

32. Are there any other views you wish to share in relation to emissions pricing?

It is a major concern to us that as noted in the discussion document "just over half" of commercial entities face emission pricing. The exemption of industry groups from the ETS by previous governments has been a major factor in creating the scale of change now required. We do not believe any industry should be exempt. This applies also to the allocation of free NZUs to EITE. Although we understand the need for balance here from an overall emission reduction perspective and the adverse psychological impact on the efforts of others if they perceive some industries are not contributing directly.

We also note the comments on Governance and agree that this must be addressed if the system is not to lose credibility through the purchase of junk credits as has happened in the past.

### Planning

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

The greatest problem with the current system is a lack of strategic planning coupled with a robust regulatory and economic policy framework to give effect to plans. We see the greatest problem with the proposals in train is for them to be considered in isolation rather than integral parts of a system. We are particularly concerned that there is still an over-relace on market forces and a failure to recognise that whilst this is an invaluable tool its use needs to be directed so that the optimum means of achieving a profit is aligned with societal, not private goals.

34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

As noted above fund projects to lead demand for high density communities around amenities and public transport hubs, with active mode and micro mobility transport options prioritised internally and PT between nodes.

#### 35. Are there any other views you wish to share in relation to planning?

We note and trust the Strategic Planning Act will address the current use of the RMA to oppose changes to deliver public good on the basis of purely personal views (NIMBYism). We hope that the example of science led decision making during the C19 pandemic will provide the basis for future planning decisions rather than personal perceptions.

We would add that this should not infer any retreat from the original intent of the RMA to protect the natural environment from exploitation for private gain.

### **Research, science and innovation**

*36.* What are the big challenges, particularly around technology, that a mission-based approach could help solve?

We fully support the concept of a mission based approach, but have no expertise in its application to technology so cannot comment on potential challenges.

37. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?

We do not have the expertise to comment.

38. What opportunities are there in areas where Aotearoa has a unique global advantage in low-emissions abatement?

#### We do not have the expertise to comment

39. How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?

The author has long contended that the bases of Mātauranga Māori and Systems methodology are closely aligned. With specific reference to this topic the importance given in both to the conceptual environment although expressed differently, creates an opportunity to constructively challenge existing paradigms and create opportunities that have a greater chance of disrupting current industry practices whilst also incorporating greater environmental kaitakitanga.

40. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?

#### We do not have the expertise to answer this.

41. Are there any other views you wish to share in relation to research, science and innovation?

We again wish to emphasise the need to adopt a whole of system approach when evaluating technological innovation. Much of our current problems with emissions have arisen from reductive reasoning optimising components and failing to consider long term effects or emergent properties of complex systems.

### **Behaviour change – empowering action**

42. What information, tools or forums would encourage you to take greater action on climate change?

We refer to our comments above on behaviour change. Behaviour change is a long term process and requires a combination of regulatory and economic levers in addition to educational means. Citing the size of the school strikes for climate action, we believe that our mokopuna need no convincing and should be encouraged to lead. It is those with a vested interest in the status quo that are dragging the chain.

43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

We consider the role of education and information sources to be a minor factor in behaviour change. Although neo classical economic theory suggests that a rational actor presented with appropriate information will make choices in their best self interest, we note that in reality this does not hold unless the threat is direct, tangible and immediate. The effects of climate change are intangible to actors within NZ and rational knowledge of future costs are insufficient to outweigh vested interests in the status quo. Citing the social unacceptability of smoking in public as a prime example we consider that unless the information depicts an immediate or short term threat to an individual actor, other mechanisms and levers are required..

44. Are there other views you wish to share in relation to behaviour change?

As noted above, tangible costs, both economic and social are required to effect behaviour change.

### Moving Aotearoa to a circular economy

45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

We firmly believe that a circular economy is essential to the continued survival and well being of Aotearoa. However, at this stage we cannot elaborate beyond the suggestions in the consultation document.

46. How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?

We do not have the time to do this question justice within the timeframe of this submission.

47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?

Yes we believe that the bioeconomy is an integral and essential part of any circular economy.

48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

We support the suggestions made. We suggest that the waste stream from building and packaging would be good places to start in advance of a fully developed strategy. We think that these would deliver co-benefits in other areas as well as being highly visible and so likely to influence behaviour change well beyond their immediate scope.

49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

Reactive and predatory pricing by competing industries and firms with high sunk costs and a vested interest in maintaining the status quo.

50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

We again endorse the Commission's view. We consider that the greatest barrier to acceptance will be from those invested in the current linear economy and financial accounting systems that restrict their scope to tangible financial considerations rather than true economic, social and environmental costs.

51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

Not at this stage. We consider this subject worthy of a submission in its own right.

### Transitioning key sectors

### Transport

We note that in the preamble to this section the dot points listing the Government's role includes behaviour change as a separate item. Whilst we agree with the actions suggested here, based on our experience and the literature, education in isolation fails to achieve effective behaviour change. This can only be accomplished through public identification of a tangible and personal cost.

Both positive and negative incentives are required. The degree to which there is perceived equity of risk and cost are also critical.

52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

Yes. We believe that reduction of VKT by the light vehicle fleets is essential to achieving the required emissions targets.

We note however that despite this and the demonstrable co-benefits of mode shift to active mode, the concept of multi modal journeys as the norm is not common in NZ, and the car industry continues to reinforce the belief that a car is essential to aspirational goals. Nonetheless we agree that there is evidence that within the major cities there is the same proportion willing to transition

to active mode and public transport as has been achieved in Europe. Our concern is that at a local Government level moves to address the greatest barrier to uptake of active mode – the perception of safety from motorised vehicles - remains a major hurdle. A continuous network of footpaths and cycle ways is essential and this will inevitably require re-purposing of road space. A move that is politically fraught and longwinded to the extent it is unlikely to be achieved within the necessary timeframe unless central Govt intervention is forthcoming..

Secondly we would emphasise as noted in our comments on equity, that use of light vehicles for access to workplace and amenities is forced on many New Zealanders by lack of a viable alternative. We note and support the proposed buy back scheme to remove the worst polluting vehicles creating inequity in access to transport.

Similarly, we consider the current funding and operating models for public transport to be less than optimum in attracting users from cars. We consider that PT fares should be subsidised from a vehicle carbon fuel tax, but note that many timetables for road based PT are based around vehicle use optimisation rather than user convenience. It appears the ghost of Dr Beeching is alive and well in many regional council transport departments. As a counter we note the re-opening this weekend of the railway line from Exeter to Okehampton in the UK, closed 50 years ago as 'uneconomic' and the opportunity to reconnect many towns in New Zealand by rail.

The basic point in all the above being that to be effective measure to reduce VKT must lead demand, not react to it.

53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

#### Yes for the same reasons cited above.

54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

Yes. We would note here that the increasing use and reliance on heavy goods vehicles (HGV) rather than rails and sea was and is driven by economic models such as Just in time delivery that fail to include external costs. We consider that externalities such as climate change impact should be included through a carbon tax.

55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

#### Yes

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

Yes.

#### 57. Are there any other views you wish to share in relation to transport?

We consider that the transitioning of the light vehicle fleet is a key factor given this contributes 43% of gross  $CO_2$  emissions. We agree that the most effective way to achieve this is to reduce VKT, but we

note the old adage 'the first thing to do when you find yourself in a hole is to stop digging'. Consequently we consider that regulatory action should be taken immediately to penalise or prevent any further importation of high emission vehicles. We are particularly concerned at the practice of 'whole of fleet' accounting which through offsets allows the continued importation of high emission, and high profit margin, vehicles. We further note that most of these high emission vehicles could not be sold in Europe and that NZ is in effect being used bolster the Australian market for the benefit of manufacturers.

We further note that a failure to decrease VKT is already crating pressure from some quarters to increase road capacity rather allowing this constraint to discourage use. We further note that the carbon footprint of road construction should also be considered when assessing transition for this sector.

### **Energy and Industry**

58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

The key priority for Grey Power is the availability of an affordable and secure energy supply for all users in line with the Commission's recommendations. We consider that the system currently lacks resilience in the absence of heat engine generation. We suggest that distribution of generation and storage at network periphery through both solar and wind generation and local battery storage is necessary to ensure security of supply. This implies a smart grid and without compromising safety, removal of the current regulatory and technical barriers to the connection of local generation to the reticulation system.

We also consider that the current pricing mechanism at both macro and micro level militates against the necessary changes. At a macro level the use of marginal cost pricing for wholesale supply is a disincentive to the most efficient use of generation capacity. We note here that the potential of pumped storage to smooth generation costs is as important as its security of supply potential.

However it is at the local level that we consider the most effective changes can be made. We note that both Germany with an average sunshine hours less than Tamaki Makaurau generates around 60 TWh/year from solar of which 2.3Gwh are from domestic installations. We further note that 70% of domestic installations in Germany have associated dedicated battery storage.

We suggest that a regulatory and financial package that sought to emulate this performance would address a wide range of issues.

Transition from coal generation should be expedited and we consider that biofuel conversion of stationary engines would assist in the transition. Again we consider that price signals that incorporate the full cost of externalities eg a carbon tax, would be the most effective policy. The anticipated increase in demand for electricity will require an upgrade of the existing grid and reticulation systems especially if the projected uptake of EV's occurs.

#### 59. What areas require clear signalling to set a pathway for transition?

Energy conservation should be the main policy concern. Reports indicate proposed changes to the building code to require 150mm stud depth to accommodate greater insulation is unlikely to proceed. We consider this again demonstrates a lack of coordination in Government policy and that

such a failure would damage not the whole transition effort by once again preferencing short term and industry specific issues over a strategic goal

We have previously noted the problems facing those on low and fixed incomes when faced with large capital expenditure, so note that even with, transitioning at end of economic life, replacing a primary home/water heating appliance is a major issue. We therefore consider that assistance for this should be provided for.

60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

We consider a high level of ambition is appropriate. NZ is fortunate that we already have a majority of generation from renewables. A large investment in solar + battery generation in Northland and the Auckland area would not only increases capacity and security but delay grid upgrade costs.

We note that consumers in the remoter parts of NZ are dependent on distribution networks that have a low level of fault tolerance when exposed to adverse weather conditions.

61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Our concern here is for domestic users, We have commented previously on the financial barriers for many older people on fixed incomes in any transition that involves a large capital outlay and suggest that consideration of distributional effects must have this as a primary concern.

62. How can work underway to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

#### We do not feel competent to comment here.

63. Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?

#### None that we are aware of.

64. In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold?

#### Yes

65. We have identified a proposed threshold of 1 kt CO2e for large stationary energy users including commercial entities. In your view, is this proposed threshold reasonable and aligned with the Government's intention to meet emissions budgets and ensure an equitable transition?

#### We lack the knowledge to comment

66. In your view, what is an appropriate threshold for other large energy users such as transport companies?

We lack the knowledge to comment

67. Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and Emissions Reporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed.

NA

68. What level of support could or should Government provide for development of low-emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

We consider that the most effective support would be to fund applied research to be made available under a creative commons licence and similarly to provide seed funding for innovative and disruptive processes.

69. Are there any other views you wish to share in relation to energy

#### No

### **Building and construction**

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

We fully support this recommendation

71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

We consider the problem of embodied carbon and accounting for the whole of life emissions as an area where Govt oversight and regulatory action to mandate or at least incentivise the use of low carbon products, and in conjunction with waste stream minimisation, incentivise re-use and re-cycling of construction materials. would be most benefit.

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

We support this in principle but repeat our caveat that transitioning to a new fuel source for in home use must included mechanisms to protect the wellbeing of low and fixed income families for whom the capital outlay would be a barrier.

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to

address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

#### No comment. This is outside our expertise.

74. Do you believe that the Government's policies and proposed actions to reduce building-related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

Please refer to the section on transitioning and equity. We believe that low income and especially those on fixed income are likely to be adversely affected by any change that require a major capital expense. We consider that the changes required to effectively minimise building lifetime carbon emissions requires a fundamental change to the normal building practices and expectations. We consider that this will require a Govt led formal re-education and behaviour change.

75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?

#### We suggest that by acknowledging a full partnership rights under te Tiriti

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

As above we support the proposed activities, but consider them insufficient. They must be backed by both negative and positive iincentives.

77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

#### We suggest building design and construction as the best option.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

#### Not at present.

79. What should the Government take into account in exploring how to encourage lowemissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

We consider there are two main issues here. First that those most in need of retrofitting to improve thermal efficiency and low emissions are often those with the least ability to commit the capital necessary. We suggest that home insulation to the highest possible standard should be provide free of charge and financed from a carbon tax. 80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

We do not have the knowledge to comment here.

81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

Changing the building code to mandate construction to Passiv Haus standards and the use of factory assembled prefabricated components to avoid any on site work that may inadvertently of deliberately compromise the thermal efficiency of the building.

82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

No

### Agriculture

83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions? a. How could the Government support the specific needs of Māori-collective land owners?

We have no information that would assist.

84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

The most obvious means would be to allow a full offset of costs plus interest against any future emission pricing incurred.

85. What research and development on mitigations should Government and the sector be supporting?

We consider that there has been ample research to indicate the best measures to achieve reductions in emissions. Principally a reduction in dairy herd numbers.

86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Perhaps a Govt. backed certification similar to private sector organic certification.

87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

We believe that the normal economic and regulatory levers are most appropriate. Whilst some regulations under the NPS-FM will assist, we consider that full inclusion in the ETS and a realistic carbon price would be the most effective.

88. Are there any other views you wish to share in relation to agriculture?

We find it unacceptable that the industry with the single largest emission profile is exempted from immediate inclusion in ETS. We recognise that as in all industries, a basic emission profile in inherent in farming. We have in previous submissions also noted that the current unacceptable level of emissions is directly correlated with the increase in the dairy herd and the associated move to a high level of supplementary feed such as PKE, and artificial nitrogen fertilizer application. We consider that this has been encouraged by a marketing chain that preferences production volume to sell into a commodity market, and itself is a major contributor of emissions. We consider that a reduction in dairy herd size to one that can be sustained through regenerative agriculture is imperative.

We further note that whilst we support the two gas approach to emissions, we consider, for the reasons stated above, that methane emissions should be fully included in the ETS and any carbon tax from inception. We are well aware that there are many farmers in all parts of the sector that are, and have, made great strides on a voluntary basis to minimise their emissions through changing practices. We consider it inequitable and unethical that they should be effectively penalised for their efforts by allowing those who have not done so a free ride.

### Waste

89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035? 90.

We consider a swift reduction in methane emissions critical. Reduction in the wate stream must be a top priority, not just from emissions perspective but from wider economic and land use perspective.

90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?

With respect to food waste we, as a generation that was raised, from economic necessity on an ethos of frugality and a climate of shortage, find the waste of food an anathema and would fully support any measures that would curtail this. We note though that anecdotal evidence suggests that much of this waste is an unintended consequence of food packaging and expiry date regulation. Clearly we would not wish any public health measures compromised but consider that the distancing of the general population from direct contact with many basic food items and their source has led to a lack of knowledge and familiarity that enables more efficient choice and use of food types and quantities.

As noted elsewhere we support further education as an essential but insufficient component of behaviour change. We also note that most people do not generate waste but have it thrust on them. They are just the last link in the disposal chain. The use of non bio-degradable packaging must be eliminated at source. We therefore fully support a consumption approach when determining any carbon tax on packaging.

91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

As noted above we consider households in particular as a component of the waste chain not a generator. With the exception of food waste, the aim must not be reducing the waste a household passes to land fill, but minimisation of the waste stream entering the household.

92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

Yes. We note that this is already done elsewhere, eg the UK. Our only concern would be that there is no additional cost to the household in doing so since this would be in our experience sufficient disincentive to negate the practice.

93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

In principle yes. However we would be concerned to ensure that the alternative was not worse from an emission reduction perspective.

94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

Yes. We note that these are well proven and economic.

95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

#### Yes. Again we are somewhat surprised that this is not a universal requirement

- 96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?
- Yes. We note that this is common practice overseas
- 97. Do you think the proposals outlined in this document should also extend to farm dumps?
- Yes. There is not logical reason to exclude them
- 98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?

Again the most obvious answer is the one that is applied in any other industry, minimise the practices that create the waste, and recycle or repurpose what is produced.

99. What other options could significantly reduce landfill waste emissions across Aotearoa?

We consider the amount of waste generated by the construction industry unacceptable and avoidable. We consider that a whole of system approach is needed to minimise waste at both construction and removal stages. Design standards and regulatory provisions in district plans must encourage componentry and modular design produced in factories to reduce or eliminate on site work and waste generation. This process should also facilitate the reuse and recycling of components at the end of building life. We believe that behaviour change is required coupled with industry disruption to move away from small scale 'construction on site' approach. Similarly even

the words used: 'site clearance' and 'demolition' indicate a lack of comprehension of alternate approaches that maximise re-use.

### **F** Gases

100. Do you think it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable, or not?

# Yes. We cite the adaptation of the semi conductor industry to the ban on CFCs. Sunk costs by industry should not be used as a barrier

101. One proposal is to extend the import phase down to finished products containing highglobal warming potential HFCs. What impact would this have on you or your business?

#### NA

102. What are your views on restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available?

#### We would fully support this.

103. What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?

#### We support the concept but have no expertise to comment further.

104. Do you have any thoughts on alternatives to HFC refrigerants Aotearoa should utilise (eg, hydrofluoroolefins or natural refrigerants)?

#### We lack the knowledge to comment.

105. Can you suggest ways to reduce refrigerant emissions, in combination with other aspects of heating and cooling design, such as energy efficiency and building design?

Cleary, and returning to our theme of 'First stop making things worse', creating energy efficient buildings will minimise the use of F gas based appliances and can potentially eliminate the need for them at all so far as home climate control is concerned.

### Forestry

106. Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

We recognise the contribution forestry makes to our net emissions profile. However we consider any move to embed this counter productive. We must reduce gross emissions, not rely on offsets. Please also see our comments under Transitioning.

107. What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?

Please see our comments under transitioning. We consider the that the future of commercial forestry in NZ should be in engineered wood and hard wood not commodities.

108. What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

Whilst payments for carbon sequestration should be the primary mechanism , there are many cobenefits that accrue. These may also warrant financial recognition through payment for ecological services.

109. What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

Please see also our comments under transitioning. We consider all of the above suggestions viable and sensible moves. We emphasise the need to create both an endemic market for high value end use and the recognition of and payment for the continued provision of ecological services. This needs to be matched by similar recognition of, and payment by the forest owners for, the environmental costs typically incurred in traditional clear felling rotation.

a. Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?

We consider that the creation of permanent exotic forests has implication beyond the scope of this submission, but do not have the time to comment further.

b. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

Please see our comments above and in Transitioning.

110. If we used more wood and wood residues from our forests to replace high-emitting products and energy sources, would you support more afforestation? Why or why not?

#### Yes. Please see our comments above re engineered wood.

- 111. What role do you think should be played by:
  - a. central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment

The RMA and its proposed successors remains the principal mechanism to protect the natural environment. Since the natural ie not human modified, environment does not contribute to anthropogenic climate change, evaluation under the RMA must be the baseline evaluation mechanism. A carbon tax we consider should be used neutrally to both impose and reduce cost based on the level of ecological services, including climate altering emissions, provided or lost by the action under consideration.

b. the private sector in influencing the location and scale of afforestation?

Please provide reasons for your answer.

112. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

#### We suggest expanding the scope of the work done under the management of Bovine TB.

113. From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?

We do not have the right to comment.

114. Are there any other views you wish to share in relation to forestry?

NA

Emissions Reduction Plan (ERP) submission

Submitted by Gwen Struik -

**Question 4.** How can ERP promote nature based solutions that are good for both climate & biodiversity?

Human Survival, according to Sir David Attenborough, depends on our reversing the trend of the past decades of WILD (biodiverse) to TAME (monoculture). In his life's journey of documenting the natural world Attenborough (see "A life on our planet") has seen nature reduced to monoculture of a few plant species and a few domesticated animals over much of the earth's surface. This applies to Aotearoa. The food we eat and the air we breathe depends on humans REWILDING the world we have been destroying. At present, in Aotearoa, most land and water applied research is about enhancing monocultures and it is necessary to rewild and research ways to biodiversity and then implement. Or better, go directly to support the implementing already in progress - much of which is with volunteer initiative and labour.

An example, is the essential rewilding of wetlands - fresh (e.g. swamps), brackish (e.g. mangroves, estuaries) and salt (e.g. coastal and off shore). It is these ecosystems which not only have high productivity, several times higher than adjacent land, as measured by dry weight per unit area per year, but also have very high sequestration of Carbon. So if want to remove carbon, wetlands are the place to begin. About 90% of Aotearoa's wetlands have been destroyed, mainly for monocultures. There is research which shows the cheapest way to rewild wetlands is to pay private land owners to remove cows, as one example. Wetlands provide many ecosystem services (Clarkson et al 2013) and restoring them will likely save money over time in flood and rising sea level protection.

In my opinion, in relation to climate change and long term planning, there is far more value gained in wetland restoration. That is we get more value per dollar spent, than in planting production pine forests

Question 49. ...barriers to circular bioeconomy.

A major barrier is foreign investment. For example, at present I am told, 70% of Aotearoa production forests are overseas owned and recently when timber was urgently needed for house building the largest forestry company decided to send the timber to Japan the home country of the forest company.

Another example is the sale of Aotearoa drinking water. This is more precious than any other of nature's bounty since water, along with healthy soil and breathable air, is essential for life as we know it.

Also, selling land to any one off-shore must also be a no-no. In fact, the whole concept of ownership or water, air, land is a questionable concept - it should be held in trust for future generations - it "belongs" or is the birthright of all living beings and with "rights" come responsibilities, which are usually not part of the "ownership" concept. When land is owned overseas there is less incentive to treat it in a sustainable way than if it is owner occupied.

Another example is that, at present, a UK company is applying to put a "datacenter" in Clyde, south Otago, which will use energy equal to supply 10,000 homes and this energy will not be available for resident people. Profits will flow off-shore.

Question 52. ...do you support target to reduce VKT by 20% by 2035..."

No - sooner please.

Question 54. ... reduce freight emissions by 25% by 2035

yes - sooner the better.

Question 55...reduce emissions of transport fuel by 15% by 2035

Provisional Yes ... Suggest 50% by 2035.

**Question 56**...internal combustion vehicles entering, manufacturing or assembling in Aotearoa by 2030

We also need to do the research to make conversion of vehicles to electric or to non-vehicle use viable. I understand that Aotearoa has more cars per head of population in the world and I recall the 1950s when households were limited to one car. This necessitates a much improved and affordable public transport system.

**Question 85**...Agriculture...research and development on mitigation with government and agriculture sector.

We need to re-instate experimental farms which research sustainable agriculture which does not rely on imported fertiliser, and other imports. That is, land use methods which are sustainable and self-sufficient in the long term. We have had such research and educational farms in the past, but successive governments have opened and then closed them. Such farms must be long-term since land use needs a lead-in period. Such land use research has had many names such as "organic", regenerative, composting, recycling all nutrients. It must be non-monoculture and include learning of micro-organisms and invertebrates and all life of air, water and soil.

**Question 90.** ...education and behaviour change to help households, communities, and businesses reduce organic "wastes".

"Waste" is a human construct - functioning ecosystems have no "waste" - all is used and re-used and re-re-used. In fact, there are numerous examples of when a human activity produces a "waste" product and the producer is charged to handle this "waste" - it can often become a "resource" (another arrogant human concept - nature's bounty is for all living things- only humans treat it otherwise). And the "resource" often has value and can be sold i.e. make money (another human concept). A simple example of this is "waste" from a freezing works changes into a saleable compost when the works is required to pay for sewage disposal. It is possible that e-"waste" will one day be mined for the rare and not-so-rare metals therein...in fact that is starting to happen as we write...

Respectfully submitted,

Gwen Struik (PhD, ecology)

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Thermal wind is a new renewable energy vector from H2oTurbines Ltd a UK based SME. Thermal wind is the mechanical conversion of wind into heat. Using machines that are 15-20% less efficient than wind turbines.

This reduction in efficiency is planned. As it allows operation almost anywhere in NZ. This lack of efficiency is more than made up for with a cheaper cost than the equivalent size wind turbine.

Conventional thought has electricity as the main driver in the decarbonisation of heat, we wholeheartedly disagree!

Here in the UK the renewable energy mix is 34% renewable / 66% fossil. So, it's not clean at all.

Electricity at BEST can achieve a coefficient from air, ground or water sources of 3-4 using a heat pump cost 0.10kwh

Thermal wind at WORST can achieve a coefficient from thermal wind of 9-10 using a high temperature heat pump cost 0.03kwh

At BEST thermal wind is generating at 0.01-2kwh. All pollution free.

This is all very disturbing for engineers. Electrify everything is the logical solution. we contradict that by a large margin. electrify everything, hydrogen it's lazy engineering not a solution.

We would be looking for an academic partner at one or more of your universities. we would like to ship over one machine for your assessment.

Our scale up roadmap is a managed interactive tool. A series of milestone achievements and official accreditation, will retain the confidence of our partners, over the 2-year 150kw project we are about to undertake.

Ultimately our machines are too big to ship we would look to develop an NZ supply train and produce machines in country. Your Universities are key to this development.

It would be fantastic if New Zealand came onboard. The opportunities for that large scale decarbonisation using thermal wind are one not missed by industry here. Emission free factories are now not only possible but highly likely emission free will save a fortune in coming 30 years. Thermal wind provides the enabling technology. Only from H2oTurbines Ltd, Patent pending.

Best Regards Clifford Spilsbury

?

### **Clifford Spilsbury**

H2oTurbines Ltd, Research & Development Director



Thornton Science Park Pool Lane, Ince Cheshire, Cheshire CH2 4NU <u>http://h2oturbines.com</u>



#### H2o Turbines Ltd Public Description

#### Introduction

Heat and air pollution are among the world's biggest challenges. Heat production currently accounts for approximately 50% of Europe's total emissions. Air pollution related deaths account for a staggering 10.5 million, it is by far the world's biggest killer.

We believe that the answer to reduced carbon heat is a local multi vector approach, based on the combination of technologies, contributing and interacting with each other towards the net zero landscape in the most cost-effective way, with the lowest pressure on our local environment. To achieve this an element in the renewable spectrum is missing. It is access to a source of renewable heat in the winter.

Within the heating sector there is an overwhelming need for a game changer. A primary driver that can help fill the void left by the reduction and eradication of gas, oil and coal and at the same time can enhance the performance of existing solutions in the low carbon sector.

The Missing link, that fills the renewable gap, is **Thermal wind.** Its deployment will be in a hybrid system. Heat pumps, low grade renewables, waste energy sources and storage creating a symbiotic relationship. This could reduce atmospheric pollution associated with heating to close to zero. While maintaining complete security of supply.

#### Heat From Wind

The challenge was to find a method in which we could make heat from wind commercially, outside of an onshore wind resource and putting heat into the many existing district heating systems and planned heat networks. The route via electricity was out of the question. Many of the cities that will need heating do not have an onshore wind resource for electricity generation. There is wind, but just not strong enough to power an electric turbine viably. That is exactly the void space and playing field for Thermal wind.

The average onshore wind turbine makes electricity at 0.06 - 0.12 L/kWh, this is grid transmitted and distributed, arriving at our UK homes @ 0.18 L/kWh. A heat pump with a coefficient of 3 would therefore make heat @ about 0.06 L/kWh thermal. Gas is currently @ 0.035 L/kWh thermal. If capital costs and maintenance costs are considered, the difference is even bigger.

It was clear that whatever made heat from wind must be an incredibly simple machine. It would need longevity of service. It would need to cost less than an electric generator. It would need to be viable in wind speeds that electricity generation is not, and it must be quiet. It must be everything a wind turbine is not.

We were convinced that the inefficiency used to generate heat with electric, could be improved by using hydraulics. We were also confident that we could build a machine that utilizes quiet low tip speed sails that are very quiet rather than noisy high-speed blades.

Finally, we believed that we could build a robust machine with an incredibly long service life by replacing components every 25 years (low carbon) but retaining and maintaining the structure and foundation for more than 50 years (high carbon).

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We must also differentiate ourselves from wind turbines. They are unpopular because pristine land was taken, exploited for commercial gain and gave nothing back to the locals. We do not advocate wind farms. Small wind clusters serving local needs, based on local energy ownership is a better model.

#### **Our Solution**

Our solution was to build a device that we call a **Thermal Wind Generator.** This machine harvests wind power by converting the kinetic energy of the wind through one mechanical conversion into heat of 40 to 120 degrees. It may be placed near communities. Outside of a wind resource.

Our machines are <u>not</u> <u>wind</u> <u>turbines</u> they are a modern version of a wind pumps. These have only electrical components for (remote) process control working on autonomously generated electricity by the wind generator. We simply pump water making the water hot while doing so.

Our drag style blades enable operation in lower wind speeds. Heat has half the energy density of electricity. It's much easier to make.

Heat from wind requires a very specific type of heat generator. Ours is a unique H2oTurbines design. Patent pending. It's called a hydraulic brake. In effect our machine is a gentle brake against the action of the wind on the sails. Harvesting heat generated by the brakes. Our thermal wind harvester does not compress liquid. It generates energy by creating super high Reynolds numbers between the rota and the distressed internal case of the pump.

Thermal Wind technology was initially developed in the US in the 70s and taken up by the Danish in the 80s and 90s. The technology was then shelved in favour of electric turbines.

After 5 years of prototype development, we understand why these pioneers of the technology failed. Their biggest mistake was to use oversized electrical wind turbine blades, which only work in a wind resource and produce more noise. Therefore, why make heat if you can make greater density electricity and sell it for more with less noise and smaller blades?

H2oTurbines Ltd designed a blade which would overcome this. Wind turbine blades are lift style blades gaining greater efficiency through high-speed, producing more electricity. The H2oTurbines blade is a drag style blade, suited for pumping applications.

An advantage within the built environment is that these slow speed drag style blades produce much less noise than high speed lift blades. At our optimum speed, noise would be 82 dB for a 1 MW machine VS a similar wind turbine that produce 96dB, according to our blade designer.

Then H2oTurbines developed a system of operation that matches load with wind potential. This is a distinct advantage compared to the fixed generation capacity of a single electrical turbine with a single generator.

The machine developed by H2o Turbines produces on a yearly basis much more energy than a similar sized onshore electric turbine with the same wind profile. Full load hours are a factor 1,5 to 2 higher.

Sizes and dimensions of these machines are included in the data sheets provided.

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#### CAPEX, OPEX & LCOE

CAPEX of the Thermal wind generator will be about 70% of the cost of electrical wind turbine and requires no additional components to produce heat. We expect, with mass production, to reduce the price of a machine to about 50% of a similar sized electric machine.

OPEX or running costs are a tiny fraction of the cost of running any other system. OPEX is the prime mover in the sector. Large scale heating looks at the total costs over the life of an entire system usually about 60 years. Installation costs are dwarfed by the huge cost of energy consumed over those 60 years. Our source of fuel is free, our conversion is cheap, and our transmission is short.

We estimate the Levelized Cost Of Energy to be in the region of 0.01-0.02 £/kWh.

#### System Integration

As mentioned at the beginning, we see thermal wind generators as part of a multi vector energy system combined with heat pumps that use local low-grade renewables or waste heat and storage.

Thermal wind generators can cover, with a percentage of the peak load less than 35% (due to the high full load hours) more than 60% of the total heat demand, even without storage. Combined with limited storage the generation capacity can significantly be reduced to less than 50% of peak load and a coverage up to 80% or more is possible. This heat is direct passively usable. High temperature grids (70/40) on heat pumps and low-grade renewables achieve a COP of 2,5 to 3. Including a thermal wind generator in that same system improves system efficiency up to a COP of 6,4 – 7. With storage the system efficiency can improve up to a COP of 9 to 10.

Preliminary feasibility studies show that the overall investment cost of these improved systems are not higher, with storage even significantly lower. CO2-emission reduction increases from 40% up to 85% based on a Primary Energy Factor (PEF) of 0,45 for electricity. Total Cost of Ownership (TCO) are reduced up to 30% and more. This means that the TCO per ton CO2 reduced increase with a factor 3 or more.

TCO and CO2-emission of existing high temperature heat network (70/40) can be improved significantly, even without storage, just by supplying a base load of heat with a very low percentage of the peak capacity (e.g. 20%).

#### Final

Thermal wind is a decentralized system in the main, representing no threat to existing grids. As we are not directly connected to an electricity grid, we can gain a greater service life than an electric generator as we have no electrical components to degrade.

Air quality is vastly improved locally while contributing far less to the global problem.

A great deal of effort has been placed on making silent machines as we do not have the luxury of being placed miles away from people. Typically, we like to be at least 100 meters away from a building or large tree. This protects the machine from the effects of wind buffering and greatly extends service life.

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Our drag style blades do not exceed the speed of the wind. Uniquely we can actually turn down the volume generated by reducing the tip speed of the machine. We simply apply more brake than we normally would for our highest efficiency. We believe we can tune a machine to a location if noise becomes a problem.

While commercial viability is our main concern, it is just as important that we are fit for purpose. It's not all about bigger more efficient machines. It's about serving communities always considering the social, economic, political and environmental impact, encouraging local energy ownership. We wish to be beloved of communities. Every effort has been made to satisfy even the most hardened of climate deniers or NIMBY.

Our customers will avoid carbon taxes, price increases to pay for Hydrogen and CCS, annual hydrocarbon price increases historically @ 6.8 %. They would never have to buy a heat pump or gas boiler. Connection and ownership could add value to your property.

Ownership is completely flexible. One of the key factors limiting onshore wind growth in the UK is that wind turbines owners exploit a resource, while exporting wealth. Wind turbines are actually a vote loser in rural areas. We generate local energy for local use, with locally owned machines. That's our model. We are not going to stop any other model, but we will uphold standards, designed to avoid the mistakes made by wind turbine roll out

Sensible use of multi vector heat networks with a primary role for Thermal Wind is the future of heating, cooling and desalination globally. Multi vector energy networks will revenue earnings for government. Subsidy is NOT needed for our machines, as we have bridged the gap. Subsidy should be focused on the attached heat network as connection is our main barrier to operation.

H2oTurbines Ltd and our European partner Thermal Crops BV are taking orders for 100-150 kW machines for delivery in 26-46 months. These machines can service up to 65 homes or a school for example. Our team can design a complete system for your application.

We work with what you have until what you have needs replacing. We then complete the system. We are an investment in clean air and your pocket.

Our message to low carbon teams, commercial landlords, hospitals, schools, breweries, biogas plants, sewerage works, city planners, etc. is to talk to us NOW if you are experiencing problems or need to replace components or an entire system with one that conforms to your corporate responsibility statements. Future proofed for a low carbon world. Planning can easily take two years. Thank you for you interest in the Thermal Wind Technology.

Clifford Spilsbury Research and Development Director H2oTurbines Ltd.

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H2o Turbines Ltd TIMELINE document Version: 21-10-2021/2

#### H2o Turbines Ltd TIMELINE document

#### **Introduction & Headline**

With our Thermal Wind Generator, we are <u>**not**</u> competing for the same sites, resources, or locations as Wind Turbines. Wind turbines belong in Wind resources, Thermal wind everywhere else.

Wind turbines are designed and optimized to generate electricity. Wind energy is converted into compression. High-density energy, that needs high-speed lift blades, working at higher wind speeds and as a side effect producing more noise. They are not suited for locations close to the built environment. Wind turbines are perfect for electricity production, but not for heat production.

To compete we had to build an incredibly simple and quiet machine. We are heating. This means that it can be placed near to the buildings.

Our technology generates heat by creating friction, not compression, low density energy. Friction is created by super high Reynolds numbers between the rotor and the distressed internal case of the pump. Heat is generated at lower wind speeds, resulting in 1.5 to 2 times more full load hours than a similar sized electrical Wind Turbine. Our Thermal Wind Generator is equipped with low speed, low noise drag-blades, suited for locations close to the built environment.

I am going to show you the evolution of our machine and how we made the decisions we have.

Figure 1 shows the first set-up for a Thermal Wind Generator in 2014.



Figure 1: First set-up Thermal Wind Generator 2014

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The evolution will be explained by the two main development routes:

- Heat generation
- Wind power generation

#### Heat generation

#### 1<sup>st</sup> prototype

Our initial system was a linear test rig. Linear means that the liquid is pumped around through a resistance in a closed loop circuit. To achieve sufficient resistance to produce heat, a pump with high rotation speed was required to create high fluid velocities.

It worked, but it was a little noisy and only worked well at high speeds between 1500 - 3000 RPM. The Linear test rig can be seen here (see photo and hyperlink to video below).



https://1drv.ms/v/s!AgSYgZH4BjSVqjpDF1Os1R\_MA37X?e=UehQTK

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Although the generator was not optimal, it was already possible to generate high temperature heat as shown in the picture and video below. Tests were stopped at 92 degrees when steam began to occur. It shows that with the application of other fluids, like oil, even much higher temperatures are possible.



https://cvws.icloud-content.com/B/Af-pS63FxJ1wlui6i5hMhtyqpkuAWA\_JvZ2io46RVIBWo4hhdbMZuRn/IMG\_0172.MOV?o=Ar3Pr1fvXO6dHYVioyPNmVhDM4m5ZGsbQ0TrT92KIkd&v=1&x=3&a=CAog6FcPuH5N9IO4-HuBSBQyTtTO5Zupn\_R-8Wk1Ftw8ZSsSdhDepeuXyi8Y3rXm69MvIgEAKgkC6AMA\_1Dc1iNSBHKqmS5aBMxm5GdqJZcP6h5 7YrM2XdEU4hGizQ\_86f\_3RE03W25n4SNz9GxcEHzUKBtyJUVuE\_vjQ0OWuRCuzLKBW00LX3LpIV D0GAzpEFQyLhqzHkACwOE&e=1637413919&fl=&r=90BEF2F5-8979-457B-BF34-B4F06D36249B-1&k=WGyGBC2Pp\_QEhqqdqyIudg&ckc=com.apple.largeattachment&ckz=15439E22-34B7-4085-BE40-C52AC62FC195&p=27&s=CzaaUHDtYfzfFyd3ASDK3jjrw2w&teh=1&%20=17541eb4-d3cc-4aba-a9f3-674705bf74e0

#### 2<sup>nd</sup> prototype

To elaborate the working range, it was concluded that we need high Reynold numbers to create high resistance at low rotation speeds. The solution was to use the rotary movement of a centrifugal pump and use a kind of brush as a rotary, which has a large surface area to create high Reynolds numbers within the liquid at low speed. And this worked.

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This is our heat making pump being tested in the workshop (see photo and hyperlinks to the 3 videos' below) driven by an electric motor.



Low speed 940 RPM: <u>https://1drv.ms/v/s!AgSYgZH4BjSVkUWWFxBgO5eNvoVe</u> Medium speed 1.200 RPM: <u>https://1drv.ms/v/s!AgSYgZH4BjSVkUSSbOyBmpyG3-hT</u> High Speed 1.400 RPM: <u>https://1drv.ms/v/s!AgSYgZH4BjSVkUIjYLotF7miKeDE</u>

Low speed and high speed are as low and high as we could go with our electric motor of 3KW. Tests were done in about 5 minutes. The goal was to show that heat generation at lower speeds is possible, not to reach the highest temperatures.

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Pump development has continued, our latest model is more refined and built to last (see drawing below).



On the left you see the input shaft of the blades entering a beveled gearbox transferring the energy through ninety degrees to a planetary gearbox. This provides the drive to the pumps, which are placed in series and can be selected by clutches (mechanical or electrical) depending on the load. So, we don't need a large nacelle and are able to match load with wind potential.

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#### Wind turbine

The first wind turbine was a handmade horizontal axis windmill and the application of commercially available lift blades, as used for electric wind turbines, shown in the pictures below.



Completely handmade, starting with what we knew. The application of a horizontal axis windmill with typical wind turbine blades. With these blades no good results were achieved.

So, we built our own lift-style blades with drag style proportions and obtuse attack angles. It was attached to the 1<sup>st</sup> prototype heat generator (linear test rig) and that worked very well. See photo and hyperlink to video below.

Notice the silence of operation, and the width of the blades. The ration of the blade 3:1 is suited for small windmills, but not practical for larger machines. The weight would be too great. But we discovered that brought blades with an obtuse attach angle is the solution to produce the required torque for heat generation at low wind speeds.

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https://netorgft1126453b-

my.sharepoint.com/:v:/g/personal/cliffordspilsbury\_h2oturbines\_com/ESbfF0TILchArx0gvSXOEtsBV8 750ktl11Ehv-eke2iHcA?e=KILgvy.

When we changed the heat generator from the linear to the rotary system (see chapter heat generation) we tried commercially available vertical axis wind turbine blades, but this showed us that lift style blades are not the right application for generating heat (see photo and hyperlink to video below). They do not have the power to produce enough torque at low wind speeds.



https://1drv.ms/v/s!AgSYgZH4BjSVqjxzrO2odry4Tlfc?e=QHkuKk

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Knowing that drag and torque are needed for heat generation we looked for commercially available drag style blades. This vertical axis, drag style bladed windmill (see photo and hyperlink to video's below) worked very well.



#### https://1drv.ms/u/s!AgSYgZH4BjSVqj10ZkaAQd96ntKw?e=ijYxZT



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https://1drv.ms/v/s!AgSYgZH4BjSVoQs4aPI-hNeUtnno

So, we discovered that drag style blades always work and wind turbine blades do not. The attack angle against the wind needs to be more obtuse and blades need to be broad to generate torque instead of speed.

The rotary version of a drag style blade worked very well but a vertical axis blade needs high wind speeds to operate efficiently. A good solution for high wind speed areas like the south pole but not in our region. However, it showed us that we can achieve higher outputs than with a fixed capacity wind turbine generator.

Based on the very good results with horizontal axis lift-style blades with drag style proportions and rotary heat generator we concluded that this is the solution for generating heat out of wind.

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The challenge is to make broad horizontal drag style blades that are light by choosing the right materials and material combinations. Light composite materials in combination with sails seem to be the path to follow. This is the last step in the development of the Thermal Wind Generator.

Another learning point was that the decision to put the pump and gearbox on the floor for easy access was a mistake. It means that the complete torque of the windmill was too excessive for the drive train. It broke several times. It confirmed that the primary idea to put the gearbox and pump at the head of the mast (like the electric generator of a wind turbine) is the better configuration, which has become the chosen solution.

#### Roadmap to the final Thermal Wind Generator

#### 150 kW version

#### Work package 1

The configuration of our 150kw machine will be based on the results obtained from the extensive testing of our standard pump unit.

The standard pump unit is used in all our machines and is expected to have a heat output between 50-75kw at an RPM of 15-1700.

We would also like to investigate the overcapacity potential of our pump, running it up to 2800 as this overcapacity measurement will be needed for our "more full load hours" claim against wind turbines. This test is crucial to the success of the project as outputs from the test will be used to assist our partners and sub-contractors with their part of the design process.

Data generation is essential for H2oTurbines Ltd as it will establish our operational baseline. The overall system efficiency will be established.

Power curves relating to RMP in / Heat out will be recorded, accredited and published.

Delivery partners Innovate UK edge. BRE Ltd.

Output 1 to be delivered in the form of an Environmental Technology Verification. Output 2 to be an assessment of the potential thermal wind in operation with a high temperature heat pump.

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#### Work package 2

Blade and Rotor design. A measurement of torque is required to turn our pump, over its operational range. This is essential information for the blade designers.

Outputs from the blade designers, will be a design as well as blade and rotor configuration, which may be modeled using computational fluid dynamics to predict outputs. Finite modeled to predict a service life.

Weight and wind velocity measurements are crucial to the designers of the foundation structure and top cap.

Examination of lightning conductivity and blade de-icing technologies. A blade de-icing document produced by Rolls Royce will be our guideline.

Examine the two-piece blade design, bonded and secured on site. Delivery Partners We4Ce BV.

#### Work package 3

Foundation, structure and top cap.

On receipt of the data relating to weights, measurements, and values generated in the test and blade/rotor design, our Design Engineers will specify our foundations, structure construction technique, and calculate the load placed on the top cap equipment and design accordingly.

CFD and finite modelling will be conducted using the blade/rotor model in a whole of structure assessment.

Our Design Engineers will produce a working top cap. Delivery Partners Innovolo Ltd, Docan Ltd.

This is a configuration that includes up to 3 pumps in a series configuration. Our gearbox manufacturer is confident of the selection by gearbox, 1 pump selected in light winds, 3 pumps in strong winds.

The top cap will be tested at full load, using a 200kw electric motor, inverter and step-down gearbox.

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#### Work package 4

Top cap control system.

The top cap has an on board 24-volt DC Generator pack which engages with the input drive shaft, if needed. Solar PV mounted on the structures southwest face will provide most of the needed control, sensor and limited start up, de-icing power via an onboard battery pack.

Pitch and yaw are controlled via a software package that takes wind speed and direction outputs and converts to inputs for the controlling stepper motors. Manual control will be possible for maintenance. The machine will carry a full range of sensors for remote monitoring.

#### Work Package 5

Blade construction.

The construction package includes mold manufacture, stands and instruction for H2oTurbines ltd staff, in manufacturing techniques, and several weeks post instruction supervision. Delivery partners AMRC University of Sheffield.

#### Work Package 6

Material handling.

Blade carriers, protective transportation of our components, all 150kw components should fit onto a 13.75-meter flat beds with Hyab. Delivery partners Docan.Ltd.

#### Work package 7

Suitable factory space.

15–22-meter curing oven, overhead crane, forklifts, flooring conditions, maneuvering space, loading and receiving bays, health and safety, factory planning continuous process. Hazardous/ flammable materials. H2oTurbines Ltd.

#### Work package 8

Site inspection.

Soil samples, elevation drawings for planning, access planning, safety and land protection including running boards. Site restrictions, wind considerations, site considerations, risk assessment, planning coordination, plant hire, weather.

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#### 1 – 3 MW version

Our machines will eventually look like this (see drawing and hyperlink to video below). This is a 3MW version.



https://1drv.ms/v/s!AgSYgZH4BjSVqkFoF9J0Hf6D1XKZ?e=3U4bjq

The future. Scale,Scale.Scale. The future would see 15-20 lines producing in each factory.

https://1drv.ms/v/s!AgSYgZH4BjSVqkPih55ac7-VSSA1?e=1G73cY

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TriSkill BV 6372XT Landgraaf The Netherlands

H2oTurbines Ltd. Attn. Mister Clifford Spilsbury, Research & Development Director Thornton Science Park Pool Lane, Ince Cheshire, CH2 4NU United Kingdom

Subject: Letter of recommendation H2oTurbines Ltd Reference: TS-20210520-TZ01 20th of May 2021

Dear mister Spilsbury,

Hereby we send you our letter of recommendation for the heat turbines of H2oTurbines Ltd.

As familiar to you TriSkill BV (Ltd.) is an expert, advisor and system achitect with a long term experience in the realisation of integrated smart heating and cooling concepts for the built environment and industry, especially so called 5<sup>th</sup> Generation Heating and Cooling (5GHDC) Grids. We apply the following principles for this:

- Closing the loop of energy en money:
  - Exchange energy localy (bilateral) and maximize re-use; every consumers becomes also a producer of energy, so called prosumer.
  - Keep the money in the region, by investing in low primairy energy solutions in the region instead of paying for high fossiel energy supply from outside.
  - o Byproducts: high quality labor (at all levels) and energy independence.
- Using the right quality of source for the right purpose:
  - Low-grade sustainable sources for low-grade applications like heating of buildings;
  - o High-grade sources for high gride applications like heating demands in industry.
- Decentralized heat and cold generation, demand driven and as close as possible to the user with the right temperature at the right moment.
- Integral: Combining and connecting all available sources and energy return flows in the area in the most optimal way, e.g. by using storage.
- Use local sources: minimize transport costs and losses.

TriSkill B.V.| Heistraat 31| 6372 XT Landgraaf | Nederland www.triskill.nl | KvK 54468213 | BTW nr. NL8513.17.182.B.01



On this moment TriSkill is part of the team that is developing a masterplan and investment memorandom for 6th biggest municipalitie in the Netherlands. It concerns a plan for the built environment to degas and sustain the heating and cooling demand of 15.000 house equivalents in the most responsible way. Our analyses show that the application of the heat turbines of H2oTrubines Ltd. result in the most sustainable an costeffective solution with the lowest impact on the area, due to a low-cost 100% sustainable heat source. Besides that the heat turbines of H2oTurbines Ltd. are easy to connect to new integral heating (and cooling) grids but also existing heating grids for the built environment, which also appears in multiple other cases we are working on.

We as TriSkill BV are a big advocate for the application of the heat turbines of H2oTurbine Ltd. In our opinion the gamechanger in the heating transition.

If your (potential) client wishes further information, please let them contact us directly by phone or e-mail:

Toine Priester BSc. Managing director and co-founder TriSkill BV

René Verhoeven MSc. Manging director and co-founder TriSkill BV



Yours sincerely, also on behalf of Mr. T. Priester,





Since 2016, H2O Turbines have been developing a new energy vector, Thermal Wind.

This is the conversion of low quality wind into low quality heat with a single mechanical conversion.

Power: 962.2kW Wind Speed: 7.5m/s Air Density: 1.2kg/m<sup>3</sup> Efficiency Factor: 40% Radius: 55m

**Capex:** £800k **Opex:** £65k

Average Daily Output (40% efficient, 70% wind) :16.16MWh Annual Output: 5.9GWh 80m

Annual Income @50MWh: £294.9k Annual Income minus Opex: £229.9k ROI: 3.48 Years

**1MW** 

# H20 TURB NES

Since 2016, H2O Turbines have been developing a new energy vector, Thermal Wind.

This is the conversion of low quality wind into low quality heat with a single mechanical conversion.

Power: 3180.8kW Wind Speed: 7.5m/s Air Density: 1.2kg/m<sup>3</sup> Efficiency Factor: 40% Radius: 100m

Capex: £2.6m Opex: £195k

Average Daily Output (40% efficient, 70% wind):52MWh Annual Output:19GWh 125m

3MW

Annual Income @50MWh: £949k Annual Income minus Opex: £754k ROI: 3.44 Years



Since 2016, H2O Turbines have been developing a new energy vector, Thermal Wind.

This is the conversion of low quality wind into low quality heat with a single mechanical conversion.

Power: 7.95kW Wind Speed: 7.5m/s Air Density: 1.2kg/m<sup>3</sup> Efficiency Factor: 40% Radius: 5m

Capex: £15k Opex: £1k

### Average Daily Output

(40% efficient, 70% wind) :131.6 KWh Annual Output: 4.8MWh

**Annual Income @**50MWh: £2.4k **Annual Income minus Opex:** £1.4k ROI: 10.7 Years

2m

**10KW** 



Since 2016, H2O Turbines have been developing a new energy vector, Thermal Wind.

This is the conversion of low quality wind into low quality heat with a single mechanical conversion.

Power: 127.2kW Wind Speed: 7.5m/s Air Density: 1.2kg/m<sup>3</sup> Efficiency Factor: 40% Radius: 20m

**Capex:** £100k **Opex:** £6.1k

### **Average Daily Output**

(40% efficient, 70% wind) : 2.1MWh Annual Output: 767MWh

Annual Income @50MWh: £38.4k Annual Income minus Opex: £32.3k

ROI: 3.1 Years

45m

**100KW** 

# Bridgend Minewater and Thermal Wind





Case Study Caerau Bridgend Borough County

Executed by TriSkill BV MSc. René Verhoeven



22 June 2021

### Heat capacity and demand



### High temperature (70/40) Centralized DH system – 800 Dwellings



| Heat load                               | Dwelling | Total |     |
|---|----------|-------|-----|
| Capacity                                | 4,8      | 3.520 | kW  |
| Space heating (renovated Rc 2,5 m2.K/W) | 7,9      | 6.356 | MWh |
| Domestic hot water                      | 1,9      | 1.489 | MWh |
| Heat losses                             | 1,9      | 1.556 | MWh |
| Total heat demand                       | 11,8     | 9.400 | MWh |

- Dwellings:
  - 100 m2
  - renovated envelope quality Rc 2,5 m2.K/W
  - mechanical ventilation
- Heat grid length 5.010 m (project information Caerau)
- Space heating 80 kWh/m2; 4,4 kW per dwelling
- Domestic hot water 1.800 kWh/y; 0,4 kW per dwelling
- Capacity includes simultaneity
- Heat losses heat grid 20% of total demand
- Weather and wind data:
  - MIDAS Gloucestershire station 00692 (Little-Rissington)
  - Global Wind Atlas

Cases



Minewater – No Thermal Wind – No Energy Storage
Minewater – No Thermal Wind – Energy Storage
Minewater – Thermal Wind – No Energy Storage
Minewater – Thermal Wind – Energy Storage

## No Thermal Wind - No Energy Storage



| Regeneratie Bron               | Aandeel | Vollasturen | COP      | dT net [K] | dT RG [K]       | [kW]]    | [GJ]   |             |              |        |
|--------------------------------|---------|-------------|----------|------------|-----------------|----------|--------|-------------|--------------|--------|
| Geen                           | 100%    | 0           | 0        | 7,0        | 7,0             | 0        | 0      |             |              |        |
| Droge Koeler                   | 0%      | 632         | 35       | 7,0        | 7,0             | 0        | 0      |             |              |        |
| TEO                            | 0%      | 1.971       | 40       | 7,8        | 7,8             | 0        | 0      |             |              |        |
| Asfalt                         | 0%      | 674         | 40       | 25,3       | 25,3            | 0        | 0      |             |              |        |
| Ondiepe Geothermie             | 0%      | 8.760       | 20       | 25,0       | 25,0            | 0        | 0      | _           |              |        |
| Windthermisch                  | 0%      | 6.831       | 1000     | 30,0       | 30,0            | 0        | 0      | 1 MW Turbi  | ne           | •      |
| Zonthermisch                   | 0%      | 1.109       | 120      | 25,0       | 25,0            | 0        | 0      | Zonthermisc | h 40 ∘C      | -      |
| Totaal                         | 100%    | 0           | 0        | 7,0        | 7,0             | 0        | 0      |             |              |        |
|                                | Aandeel | Opwek       |          | WKO        |                 | dT [K]   | m3/h   | Aantal      | 1            |        |
| Aandeel WP piek warmte         | 100,0%  | 3.519       | kW       | 2.346      | kW              | 7,0      | 287,2  | 4,1         | vaste waarde |        |
| Aandeel piek koude passief     | 100,0%  | 0           | kW       | 0          | kW              | 8,0      | 0,0    | 0,0         |              |        |
| Aandeel piek koude actief      | 0,0%    | 0           | kW       | 0          | kW              | 16,0     | 0,0    | 0,0         |              |        |
| Aandeel piek koude totaal      | 0,0%    | 0           | kW       | 130        | kW              | 8,0      | 13,9   | 0,2         |              |        |
| WKO + regeneratie              |         | 130         | kW       | 130        | kW              | 20,0     | 5,6    | 0,1         | vaste waarde |        |
| COP WP 30°C (actief koelen)    | 7       | 0           | MWhe     | ITERATIE!  | ii -            |          |        |             |              |        |
| COP WP 70°C (actief verwarmen) | 3       | 3.141       | MWhe     | Regenerat  | ievermogen      |          | 0      | kWmax       |              |        |
| COP booster WP                 | 0       | 0           | MWhe     | WKO in ba  | lans $(\leq 0)$ |          | 22,615 | GI          | 66.7% of h   | eat de |
| COP WKO                        | 30      | 209         | MWhe     |            |                 |          |        |             | (+ =         | short  |
| COP Regeneratie                | 0       | 0           | MWhe     |            |                 |          |        |             |              |        |
| COP Backbone                   | 0       | 0           | MWhe     | 0          | m3/h            | 4        | bar    |             |              |        |
| COP Cluster                    | 0       | 0           | MWhe     | 0          | m3/h            | 4        | bar    |             |              |        |
| COP Sectornet                  | 171     | 55          | MWhe     | 302        | m3/h            | 3        | bar    |             |              |        |
| COP Sectornet                  | 0       | 0           | MWhe     | 0          | m3/h            | 3        | bar    |             |              |        |
| COP Warmte                     | 2,6     | 3.615       | MWhe     |            |                 |          |        |             |              |        |
| COP Koude                      | 0,0     | 0           | MWhe     |            |                 |          |        |             |              |        |
| COP Totaal                     | 2,6     | 3.615       | MWhe     |            |                 |          |        |             |              |        |
| CO2-reductie                   |         | 800         | ton/jaar |            | тсо             |          |        |             |              |        |
|                                |         | 39          | %        |            | 1.861           | euro/ton |        |             |              |        |
| Check WKO balans               |         |             |          |            |                 |          |        |             |              |        |
| Warmtevraag                    |         | 33.922      | GJ       |            |                 |          |        |             |              |        |
| E-WP                           |         | -11.307     | GJ       |            |                 |          |        |             |              |        |
| Koude opwek                    |         | 0           | GJ       |            |                 |          |        |             |              |        |
| Regeneratie                    |         | 0           | GJ       |            |                 |          |        |             |              |        |
| WKO                            |         | 22,615      | GI       |            |                 |          |        |             |              |        |



CAPEX €18.871; TCO €1.860/jaar CO2-reductie: 39%; 1.861 euro/ton

### No Thermal Wind - Energy Storage



|                                | Aandeel  | Opwek             | Opwek WKO               |                | m3/h          | Aantal           |         |                   |
|--------------------------------|----------|-------------------|-------------------------|----------------|---------------|------------------|---------|-------------------|
| Aandeel WP piek warmte         | 48,0%    | 1.712 kW          | 1.712 kW 1.141 kW       |                | 139,7         | 2,0              |         |                   |
| Aandeel piek koude passief     | 50,0%    | 0 kW              | 0 kW 0 kW               |                | 0,0           | 0,0              |         |                   |
| Aandeel piek koude actief      | 50,0%    | 0 kW              | 0 kW 0 kW               |                | ) In buffer   |                  |         |                   |
| Aandeel piek koude buffer      | 0,0%     | 0 kW              | 0 kW 0 kW               |                | Uit buffer    |                  |         |                   |
| Aandeel piek koude totaal      | 100,0%   | 0 kW              | 0 kW                    | 8,0            | 0,0           | 0,0              |         |                   |
| WKO + RG                       |          | Q kW              | kW D kW                 |                | 0,0           | 0,0              |         |                   |
| Inhoud energieopslag           | 7.500 m  | 3                 |                         |                |               |                  |         |                   |
| T-max opslag (WP) winter       | 70 °C    | Begin wir         | Begin winter 6.300      |                | V-top MIN     |                  |         | 27 m3             |
| T-min opslag zomer             | 40 °C    | Begin zor         | Begin zomer 2.60        |                | V-midden be   | gin zonder WK    | 0       | 326 m3            |
| T-max opslag (WT en/of PT)     | 70 °C    | Tmax but          | ffer                    | 70,2 °C        | V-midden be   | gin met WKO      |         | 12 m3             |
| T-max actief koelen            | 70°C     |                   |                         |                | V-midden eir  | nde              |         | 12 m3             |
| T-opslag begin                 | 69,95 °C | T-begin gelijk ma | ken aan T-eind          | e              |               |                  |         |                   |
| T-opslag einde                 | 69,95 °C |                   |                         |                |               |                  |         |                   |
| Verschil                       | 00.0     |                   |                         |                |               |                  |         |                   |
|                                |          |                   | ITERATIEIII             |                |               |                  |         |                   |
| COP WP actief koelen           | 5        | 0 MWhe            | Regeneratieve           | rmogen         | 0             | kW/max           |         |                   |
| COP WP 70°C (actief verwarmen) | 3        | MWhe              | MWbe WKO in balans (5.0 |                | 23.616        | GI (met WKO)     |         | 66.7% of heat der |
| COP WP 70°C (onslag)           | 4        | 3.280 MWhe        | Ooslag in bala          | 15             | 0.0           | K Izonder WKC    | 11      | (+ = short)       |
| COP booster WP                 | 6        | 0 MWbe            | obund at one            |                |               | in provident and | a.      | the support       |
| COPWKO                         | 30       | 219 MWhe          |                         |                |               |                  |         |                   |
| COP Regeneratie                | 0        | 0 MWhe            |                         |                |               |                  |         |                   |
| COP Backbone                   | 0        | 0 MWhe            | 0 m3                    | /h 4           | l bar         |                  |         |                   |
| COP Cluster                    | ۵        | 0 MWhe            | D m3                    | /h 4           | 4 bar         |                  |         |                   |
| COP Sectomet                   | 171      | 55 MWhe           | 302 m3                  | /h 3           | 3 bar         |                  |         |                   |
| COP Sectornet                  | 0        | 0 MWhe            | 0 m3                    | /h 3           | 3 bar         |                  |         |                   |
| COP Opslag                     | 680      | 8 MWhe            | 87.399 m3               |                | ( bai         | 30 K             |         |                   |
| COP Warmte                     | 2,6      | 3.766 MWhe        |                         |                |               |                  |         |                   |
| COP Koude                      | 0,0      | 0 MWhe            |                         |                |               |                  |         |                   |
| COP Totaal                     | 2,6      | 3.766 MWhe        |                         |                |               |                  |         |                   |
| CO2-reductio                   |          | 878 ton/isar      |                         | TCO            | Mot vorsus 7  | onder onslag     |         |                   |
| COL TOPULITE                   |          | 40 %              |                         | 1.538 euro/ton | 99,2%         | onder opside     |         |                   |
|                                |          |                   |                         |                |               |                  |         |                   |
| Aantal Cycli Ecovat            |          | dT+               | dT-                     | Warmteve       | rlies         | Tgem-opsl        | ag      |                   |
| đT                             | 30,1 K   | 17                | 5 -175 K                | 0,14           | 4 W/m3.K      | 55,3             | 55,3 °C |                   |
| Opslag                         | 5.506 GJ |                   |                         | 6,34           | + W/m3        |                  |         |                   |
| Cyclus                         | 947 GJ   |                   |                         | 47,6           | 5 kW          |                  |         |                   |
| Aantal Cycli                   | 5,8 -    |                   |                         | 1.500          | ) GI          |                  |         |                   |
|                                |          |                   |                         | 4,23%          | 6 totale warm | tevraag          |         |                   |



# Thermal Wind - No Energy Storage

(+ = short)



Klimaatjaar 2018 dT net [K] dT RG [K] [kW]] **Regeneratie Bron** Aandeel Vollasturen COP [GJ] Geen 0% 0 0 7,0 7,0 0 0% 632 35 7,0 7,0 0 Droge Koeler TEO 0% 1.971 40 7,8 7,8 0 Asfalt 0% 674 40 25,3 25,3 0 0% **Ondiepe Geothermie** 8.760 20 25,0 25.0 0 1 MW Turbine Windthermisch 100% 6.831 1000 30,0 30,0 1.214 29.851 Zonthermisch 0% 1.109 120 25,0 25,0 0 0 Zonthermisch 40 °C 100% 6.831 1.000 30,0 30,0 1.214 29.851 Totaal WKO Aandeel Opwek dT [K] m3/h Aantal Aandeel WP piek warmte 100,0% 3.519 kW 1.813 kW 10,0 155.4 2,2 vaste waarde 0 kW 0,0 Aandeel piek koude passief 100,0% 0 kW 8,0 0,0 Aandeel piek koude actief 0.0% 0 kW 0 kW 16,0 0.0 0,0 0 kW Aandeel piek koude totaal 0,0% 0 kW 8,0 0,0 0,0 -43.7 WKO + regeneratie -1.019 kW -1.019 kW 20.0 -0,6 vaste waarde COP WP 30°C (actief koelen) 0 MWhe ITERATIE!!! COP WP 70°C (actief verwarmen) 1.131 MWhe Regeneratievermogen 1.214 kWmax 3 0 WKO in balans ( $\leq 0$ ) COP booster WP 0 MWhe 0,0% of heat demand COP WKO 30 151 MWhe **COP** Regeneratie 1.000 8 MWhe **COP** Backbone 1.389 21 MWhe 35 m3/h 4 bar **COP** Cluster 1.389 21 MWhe 35 m3/h 4 bar 3 bar **COP** Sectornet 171 55 MWhe 302 m3/h **COP** Sectornet 0 0 MWhe 0 m3/h 3 bar **COP** Warmte 6,4 1.463 MWhe COP Koude 0,0 75 MWhe **COP** Totaal 6,1 1.539 MWhe CO2-reductie 1505 ton/jaar TCO 74 % 793 euro/ton Check WKO balans Warmtevraag 33.922 GJ E-WP -4.072 GJ Koude opwek 0 GJ -29.851 GJ Regeneratie WKO 0 GJ



CAPEX €18.896; TCO €1.493/year CO2-reduction: 74%; 793 euro/ton

## Thermal Wind - Energy Storage



| Aandeel WP piek warmte         | Aandeel<br>44,0% | Opwek<br>1.575 kW  | WKO<br>1.050 kW     | dT [K] m3/h Aantal<br>10,0 90,0 1,3 |                         | Hourly profiles with energy storage                                    |  |
|--------------------------------|------------------|--------------------|---------------------|-------------------------------------|-------------------------|--|--|
| Aandeel plek koude passier     | 50,0%            | 0 KW               | O KW                | 8,0 0,0 0,0                         |                         |  |  |
| Aandeel piek koude actiel      | 0.0%             | D KW               | Okw                 | 10,0 in builer                      |                         | Minewater dT - 10K.  |  |
| Aandeel piek koude outler      | 100.0%           | O KW               | OKW                 |                                     |                         | Willewater ut - 10K,   |  |
| WKO + RG                       | 100,0%           | -1 105 KW          | -1 105 kW           | 20.0 -47.4 -0.7                     |                         | 00 m2/h, T/M 1 260 k/M   |  |
|                                | 8 000 m3         | -11103 KVV         | -1.103 KW           | 20,0 -47,4 -0,7                     |                         | 3.000 kW 90 1113/11; 1 VV 1.300 KVV                                    |  |
| T-max opsiag (WD) winter       | 70 'C            | Regin wir          | oter 6 500          | V-top MIN                           | 1127 m2                 |  |  |
| T max opsiag (WP) writer       | 10 0             | Degin wi           | 1.300               | uur v-top wiin                      | 1137 113                | 000 400  |  |
| I-min opsiag zomer             | 10 0             | Begin zor          | mer 1.700           | uur v-midden begin zonder           | WKU 326 m3              | COP = 10.0   |  |
| I-max opslag (WI en/of PI)     | 70 C             | I max but          | ffer /0,2           | C V-midden begin met Wi             | (0 // m3                | 2000 MW  |  |
| T-max actief koelen            | 70°C             |                    |                     | V-midden einde                      | 76 m3                   | 2000 KYY   |  |
| T-opslag begin                 | 69,71 °C 7       | T-begin gelijk mak | ken aan T-einde     |                                     |                         |  |  |
| T-opslag einde                 | 69,71 °C         |                    |                     |                                     |                         |  |  |
| Verschil                       | 0,0 °C           |                    |                     |                                     |                         |  |  |
|                                |                  |                    | ITERATIE!!!         |                                     |                         |  | 1  |
| COP WP actief koelen           | 5                | 0 MWhe             | Regeneratievermoger | 1 360 kWmax                         |                         |  | a cha a bhla a bhladha   |
| COP WP 70°C (actief verwarmen) | 3                | MWhe               | WKO in balans (< 0) | -180 GI (met WK                     | 0) -0.5% of heat demand |  | u de défensive de la constante |
| COP WP 70°C (onslag)           | 3                | 709 MWhe           | Opelan in balans    | 0.0 K (zonder M                     | (KO) (4 = short)        |  |  |
| COP booster WP                 | õ                | 0 MW/he            | opoidg in building  | o,o k leonosi v                     |                         |  |  |
| COP WKD                        | 30               | 79 MW/be           |                     |                                     |                         | 0 kW   |  |
| COP Regeneratie                | 1,000            | 9 MWhe             |                     |                                     |                         | 11111111111111111111111111111111111111                                 |  |
| COP Backbone                   | 1.389            | 24 MWhe            | 39 m3/h             | 4 bar                               |                         |  | e e zi zi ai at  |
| COP Cluster                    | 1.389            | 24 MWhe            | 39 m3/h             | 4 bar                               |                         |  |  |
| COP Sectornet                  | 171              | 55 MWhe            | 302 m3/h            | 3 bar                               |                         |  |  |
| COP Sectornet                  | 0                | 0 MWhe             | 0 m3/h              | 3 bar                               |                         | -1.000 kW  | Temperature and volume profiles energy storage   |
| COP Opslag                     | 680              | 9 MWhe             | 100.704 m3          | 2 bar 30 K                          |                         |  |  |
| COP Warmte                     | 9,3              | 949 MWhe           |                     |                                     |                         |  | 1003.00  |
| COP Koude                      | 0,0              | 49 MWhe            |                     |                                     |                         |  |  |
| COP Totaal                     | 10,0             | 997 MWhe           |                     |                                     |                         | 3 000 144  |  |
|                                |                  |                    |                     |                                     |                         | -2.000 KW  |  |
| CO2-reductie                   |                  | 1803 ton/jaar      | TCO                 | Met versus zonder opsi              | B                       | 🖷 Heat [kW] 👘 Heat production [kW] 🗰 Mine [kW] 🗰 Wind [kW] 💼 Cold [kW] | Saure A A A A A A A A A A A A A A A A A A A  |
|                                |                  | 84 %               | 550                 | euro/ton 35,5%                      |                         |  | V V Storage  |
|                                |                  |                    |                     |                                     |                         |  | tanes with a secondo   |
| Aantal Cycli Ecovat            |                  | dT+                | dT-                 | Warmteverlies                       | Tgem-opslag             |  | $M$ $\Lambda$        |
| Tp                             | 25,9 K           | 189                | 9 -189 К            | 0,14 W/m3.K                         | 63,6 63,6 °C            | CADEV C17 F20 TCO C1 2401  | 0.000 m  |
| Opslag                         | 6.344 GJ         |                    |                     | 7,50 W/m3                           |                         | CAPEX E17.529; ICU E1.240/Vear   | 2005 ed  |
| Cyclus                         | 872 GJ           |                    |                     | 60,0 kW                             |                         |  |  |
| Aantal Cycli                   | 7,3 -            |                    |                     | 1.893 GJ                            |                         | CO2-reduction: 84%: 550 euro/ton                                       | Lanva  |
|                                |                  |                    |                     | 5,29% totale warmtevraag            |                         |  |  |
|                                |                  |                    |                     |                                     |                         |  | 0w0 - 5555588557053555555555555555555555555555   |

Sheet 7

## Summary



| Bridgend                                       | DEQ | Minewater | ES    | TW    | Storage | CAPEX   |            | тсо       |           | CO2-reduction |         |         |
|--|-----|-----------|-------|-------|---------|---------|------------|-----------|-----------|---------------|---------|---------|
| High temperature (70/40) Centralized DH system | [-] | [m3/h]    | [kW]  | [kW]  | [m3]    | [€/DEQ] | [€]        | [€/y/DEQ] | [€/y]     | [%]           | [ton/y] | [€/ton] |
| Minewater; no storage                          | 800 | 287       | 3.519 | 0     | 0       | 18.871  | 15.097.122 | 1.860     | 1.488.239 | 39            | 800     | 1.861   |
| Minewater; storage                             | 800 | 140       | 1.712 | 0     | 7.500   | 16.174  | 12.939.293 | 1.611     | 1.288.584 | 40            | 838     | 1.538   |
| Minewater; Heat Turbine; no storage            | 800 | 155       | 3.519 | 1.214 | 0       | 18.896  | 15.116.934 | 1.493     | 1.194.355 | 74            | 1.505   | 793     |
| Minewater; Heat Turbine; storage               | 800 | 90        | 1.575 | 1.360 | 8.000   | 17.529  | 14.022.871 | 1.240     | 991.786   | 84            | 1.803   | 550     |

DEQ = Dwelling Equivalent

ES = Energy Station

TW = Thermal Wind













- ✓ Thermal Wind reduces TCO (20%) and cost per ton CO2 (60%) significantly despite higher CAPEX in case of storage
- ✓ Thermal Wind + storage reduces minewater capacity significantly (70%) => lower risk of depletion minewater reservoir
- ✓ Storage reduces CAPEX (7 15%), TCO (15%) and cost per ton CO2 (17 30%)

> Combining minewater with thermal wind and energy storage leads to the most optimal configuration with lowest TCO, most cost effective CO2-reduction and optimal CAPEX.

## Basic principles and assumptions



| CO2-emission                |       |        |
|-----------------------------|-------|--------|
| Natural gas                 | 0,183 | kg/kWh |
| Electricity                 | 0,34  | kg/kWh |
| Efficiency Boiler           | 85%   |        |
| COP-Heatpump (70/40) all-in | 2,8   |        |

| Natural gas | 1,785 kg/m3; 9,77 kWh/m3   |
|-------------|----------------------------|
| Electricity | primary energy factor 1,45 |

- ✓ Cost based on present business market prices in the Netherlands
- ✓ Cost of thermal wind based on fact sheets provided by H2o
- ✓ TCO includes OPEX an capital cost
- ✓ Capital cost are based on annuity and interest rate of 3%



24 November 2021

Emissions reduction plan consultation Ministry for the Environment PO Box 10362 Wellington 6143

Via email: climateconsultation2021@mfe.govt.nz

#### SUBMISSION ON THE EMISSIONS REDUCTION PLAN CONSULTATION FROM HALTER

Dear Vicky Robertson

Halter welcomes the opportunity to provide feedback on the Ministry for the Environment's Emissions Reduction Plan consultation document.

I'm Craig Piggott, the founder and CEO of Halter, an Auckland-based hi-tech start-up founded in 2016, which is re-inventing the future of farming. We have developed solar-powered GPSenabled smart collars for dairy cows, providing remote management and monitoring of cow herds on dairy farms. Customer feedback is highly positive, with farmers saying it is the most fundamental improvement to dairy farming they have ever seen.

The award-winning Halter system is an unparalleled farm management tool. Halter allows farmers to automate herd movements, operate virtual fencing, manage multiple mobs, monitor cow health and detect when cows are on heat. Halter has grown to a staff of 100 people over the last four years. We currently have dozens of New Zealand farms using our system, with hundreds of farms scheduled for deployment next year.

#### **Executive summary**

The challenges of reducing New Zealand's agricultural emissions are well known. Farmers are investing now in actions that, while modest in the short-term, are starting to reduce emissions and set themselves up for more significant reductions in the long term. Halter's productivity enhancements are well documented and give farmers options for how they can reduce emissions. A typical Halter-optimised farm reduces the carbon intensity of its production by 3 per cent. This provides farmers with options to maintain their production and profitability while reducing their overall carbon emissions, for example, by reducing inputs or considering carbon sink forests for their more marginal grazing land.

Halter enables further innovative emission reduction options like using plantain in cow's diets to reduce nitrogen and nitrous oxide production. In fact, the most significant benefit of Halter is farmers having an integrated platform that can adapt as scientific breakthroughs lead to new farming techniques. Often new farming techniques are impractical to implement at scale due to commercial barriers or new infrastructure required. Instead, Halter easily enables new features to

economically roll out across existing customers by removing constraints on what is practically possible, meaning farmers benefit immediately from emissions-reducing innovations.

#### How Halter works

Halter is a kiwi hi-tech start-up implementing solar-powered GPS smart collars for dairy cows, providing remote management and monitoring of herds on dairy farms. Our customers say that, in their opinion, Halter is the most groundbreaking innovation in dairy farming since the implementation of artificial breeding over fifty years ago.

Our system is a unique farm management tool. Traditionally cows have been shifted around a farm or kept within a boundary using fences, electric wires, motorbikes, gates and dogs. Halter removes the need for these conventional labour-intensive and often stressful techniques by training cows to understand and respond to sensory cues - sound and vibration.

Halter started operations in 2016 and is rapidly developing its technology. We have customer dairy farms in the Waikato and Bay of Plenty, and we are now expanding to Canterbury, including on several Ngai Tahu farms.

A key feature of Halter is virtual fencing, which is a vastly superior type of boundary than physical fencing. Currently, physical fencing is fixed and is costly to adjust in reaction to changing conditions. Halter's virtual fencing allows farmers to set and adjust boundaries in real-time as conditions change and at no extra cost. Farmers know where each individual cow in the herd is at all times. This increases the herd's productivity while reducing the labour requirements of shifting cows around, leading to more relaxed farmers.

Halter is a comprehensive digital farm management system that tracks each cow's health and location. This online system can contribute to regulators' reporting requirements across different management regimes like nutrient discharge and Freshwater farm plans. Halter's system will adapt to new regulations as they emerge, such as emissions reporting, so it will cater to farmers looking for assurance that they are compliant.

#### Starting to tackle carbon emissions now

Addressing climate change and maintaining global temperature increases to within 1.5C is a major public policy challenge. All New Zealanders must play their part by doing what they can to decrease greenhouse gas emissions over time. Halter agrees with the consultation document's statement that "our agricultural sector is highly productive and plays an important role in our economy ... and contributes to the wellbeing of our society."

Halter sees the performance of our dairy farmers up-close and knows they are some of the most emissions-efficient producers in the world. Yet, if New Zealand is to reduce agriculture emissions, we must invest in new technology to become even more efficient. It is pleasing to see the consultation document avoids referring to blunt techniques to reduce emissions that are economically harmful and would punish farmers.

Perhaps the most crucial factor in reducing agricultural emissions is the consultation document's observation that "the work needs to begin now to unlock these opportunities". Initiatives pursued over the next few years might not reduce emissions dramatically, but they will set up the industry to perform much better as the technology matures and research uncovers new breakthroughs.

Halter can be the bridge between scientific breakthroughs and reducing farming emissions economically across the whole dairy sector. And we can roll this out at pace; Halter already provides customers with weekly software updates, meaning farmers can instantly receive any new features.

Halter strongly recommends that if the Government develops a management and reporting platform for recording emissions and offsets, that this be an open platform available for other farm management tasks such as farm plans and freshwater management plans. This will simplify the learning curve and reduce the compliance burden on farmers.

#### Halter gives farmers flexibility to reduce emissions

Halter is a proven management system that increases the productivity and profitability of dairy farms. Farmers can reduce their emissions today using the Halter system. There are several avenues for farmers to achieve this, the primary one being that Halter gives farmers the productivity boost needed to reduce emissions without reducing revenue. In other words, Halter is a tool providing farmers with flexibility and optionality on how they can reduce their emissions.

Halter engaged an independent consultancy to analyse the Halter system's impact on a typical dairy farm's emissions. One of their conclusions is that Halter reduces the carbon intensity (measured by kgCO<sub>2</sub>/milk solid) of the farm's production by 3 per cent. It does this by improving the productivity of the farm and delivering more output for the same level of inputs.

Increasing productivity in this way gives farmers options as to how they then reduce their overall emissions on the farm. They could, for example, hold their production and profitability steady and reduce inputs.

One scenario is for the farmer to hold overall farm production steady by reducing the farm's grazing area and planting some of their more marginal land in forestry. Under this scenario, a typical farmer could reduce the farm's emissions by up to 15 per cent, on top of a reduction from general farm operations of 2 per cent. Of course, every farm is different, and farmers are unlikely to retire prime dairy land for forestry. Instead, they might return young stock from external grazing and convert the external grazing land to forestry. Allowing farmers to make their own decisions with the assistance of management tools like Halter will ensure the most rational emissions reductions are made while maintaining New Zealand's economically essential exports.

Halter also allows farmers to lower their input levels more broadly. By tracking where cows are on-farm, farmers can optimise and reduce their fertiliser use. By shifting herds remotely, farmers drive their vehicles less. By remotely detecting whether cows are on heat, farmers can reduce empty rates and, therefore, reduce the replacement rate in the herd. While each of these benefits on their own is modest, they all add up to reducing emissions and reducing the amount of on-farm inputs required.

Finally, Halter helps farmers improve grazing management and, therefore, gives them the potential to increase the use of mixed pasture, such as ribbons of plantain in cow diets, which would further reduce emissions. Halter's ability to guide a cow's movement dynamically makes it very straightforward to ensure they get 10-30% of their daily diet as plantain without having dedicated cropping paddocks. Plantain reduces the Nitrogen concentration in urine which leads to a reduction in nitrous oxide emissions. Further research will be required to substantiate plantain's impact, but this method could prove to be an effective tool to reduce emissions.

#### Conclusion

Halter makes doing the right thing easier. We do not claim to have the complete answer to the challenge of reducing New Zealand's agricultural greenhouse gas emissions, but, with Halter, farmers have new options to reduce their emissions today. And Halter comes with many additional benefits from increasing productivity to improving cow health, delivering healthier waterways and reducing the compliance burden on farmers.

Independent analysis demonstrates Halter is one part of a farmer's toolkit they can use to "begin the work now". As a platform, Halter will continually roll out features and benefits to their farmers over the years ahead – meaning each improvement and breakthrough made to the system can be shared automatically with all users.

Halter looks forward to engaging further with Government to achieve its environmental and economic policy goals. Thank you for considering our submission.

Yours sincerely,

Craig Piggott Chief Executive



Level 2/18, Stanley St, Parnell, Auckland 1010

Questions 87 & 88:

How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use? Are there any other views you wish to share in relation to agriculture?

To whom it may concern,

I am making this submission regarding the agriculture aspect of the emissions reduction plan. I will address the emissions from crop and animal agriculture, what kind of farming could lower emissions in New Zealand, and how this transition could be supported. References have been provided at the end.

Firstly, I was pleased to see there was no mention of reducing the population's consumption of meat, especially beef. There has been a surge in messaging recently regarding the ecological footprint of meat consumption, which I believe is misguided. For example, the UN's most significant report, Livestock's Long Shadow, claimed livestock are responsible for 18% of GHG emissions globally, but the figure calculated emissions for the entire supply chain, from land use to processing and refrigeration in supermarkets. Meanwhile transportation figures, which are regularly reported as 28% of global GHG emissions, only factored in direct emissions from exhaust fumes, ignoring processes associated with manufacturing machinery, or moving people and produce.

What may be more significant, however, is the lack of public understanding about how the methane emitted by cattle acts in the environment. While methane is 28-times more heat-trapping than carbon dioxide, CO2 remains in the atmosphere for 1000 years, whereas methane is broken down in a process called hydroxyl oxidation in just 10 years. It then gets absorbed by plants, converted into cellulose, and eaten by livestock.

To put this into context, each year 558m tons of methane is produced globally, with 188m tons coming from agriculture. 548m of the 558m total is broken down through oxidation and absorbed by plants and soils as part of the sink effect.

Therefore, I think it would be unwise to potentially incentivise a switch to crop production, as such farming systems generally have a higher emissions footprint due to:

- 1) CO2 released from the soil by tilling
- 2) The production, transport, and application of fertiliser
- 3) The production, transport, and use of crop farming machinery
- 4) The transport and processing of crops into consumer products
- 5) The packaging and distribution of the end consumer products

Instead, I suggest that moving some cattle farms to small ruminant farming would lower emissions. New Zealand is well suited to sheep and goat farming, as these animals thrive in rugged landscapes with lower quality forage. Goats and sheep also have lower methane emissions than cattle (5kg vs 35kg-55kg methane per individual per year), although the closed cycle described above potentially negates this concern. Sheep and goats have also been used in regenerative agriculture to restore landscapes damaged by over-farming, so there is potential for land to become more productive over time if holistic management is properly implemented.

The shift from sheep to dairy cow farming was primarily a financial one, especially as the value of New Zealand wool declined. However, I believe that goat and sheep farming have the potential to be financially lucrative in today's market. Modern consumers are taking a new interest in natural, healthy, and sustainable products, and they will preferentially select them if they are suitably priced. The main barrier I see for growing this sector is consumer awareness and product availability. I co-founded HempNZ when only hemp seed oil was allowed for sale to consumers. Hemp seeds and protein powder were illegal due to a misunderstanding by regulators and the public, who thought that there were drugs in hemp products. Over the course of the 7 years I was in charge of marketing, I significantly influenced public opinion, and now hemp products

are easily available in supermarkets. I believe a similar shift could be made with goat and sheep products. Key marketing points include:

- 1) That goat and sheep milk has been shown to be more digestible for many people than cows milk.
- 2) The nutritional benefits of sheep and goat milk as compared to plant alternatives.
- 3) The nutritional benefits of sheep and goat meat as compared to plant protein.
- 4) The quality and performance of sheep and goat fibre for clothing.
- 5) The environmental benefits of goats and sheep.
- 6) The patriotism of supporting local New Zealand industry.
- 7) That manufacturers can add sheep and goat products to their existing product lines to differentiate their product from competitors e.g. goats cheese pizza, sheep milk ice cream, goat milkshake.

New Zealand is already world-famous for sheep, and China regularly exports New Zealand goats to improve the quality of their herds. New Zealand lamb sells for a premium in overseas supermarkets, despite local options. This creates an opportunity for New Zealand to build on the image of premium lamb and goat products, reared on the wild grasses of our rolling hills. There are many parts of the world where goat is actually the preferred meat, so there is opportunity to export a premium product for sale to higher-end food outlets in these locations.

Some limitations to enacting this change include a lack of milk drying facilities for goat and sheep milk, lack of dedicated slaughter facilities, and the loss of previous wool processing facilities. In addition, the push from large multinational food companies towards plant-based food items (with low-nutritional value) makes growing animal agriculture sectors more challenging going forward. Due to the high profit margins on these plant-based products, paired with the economy of scale for multinationals, these companies have significant marketing budgets to spread their message that meat production is inhumane and destroying the planet. Therefore I think it is important to move quickly in showing the public that New Zealand meat and milk is ethical both from an ecological and animal welfare standpoint. I believe that dairy cattle farming should continue, as the industry is supporting a large percentage of the New Zealand population, as well as representing a significant part of GDP. In addition, it is important to remember that 95% of New Zealand milk is exported, so of course our per capita dairy emissions will be high, but this does not mean it is not sustainable (as explained by the closed cycle). Like lamb, New Zealand dairy is internationally recognised as a quality product which fetches a premium, and it will continue to do so as other countries struggle to manage their pollution issues. It is also clear that dairy farmers care about the environmental impact of their farms, so they will continue to implement changes if given adequate time to do so.

In summary, I think that New Zealand should continue to promote and develop it's animal agriculture sector through growing the number of small ruminants farmed, developing suitable processing facilities, and public education campaigns.

Kind regards,

Harley Aspinall
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# Submission on the Emissions Reduction Plan

November 2021

## Purpose

This submission on the Emissions Reduction Plan (ERP) focuses on two aspects of the consultation document: transport and equity. It argues that to meet Aotearoa New Zealand's climate change commitments, transport policy and decision-making should be reprogrammed around two key objectives: reducing car dependence and making the transport system work better for those currently disadvantaged. Ensuring an equitable transition and reducing transport-related emissions are two focus areas of the ERP consultation document; we have prepared this submission to particularly assist with the detailed development of the final ERP in these areas.

## Background

In November 2020, the Helen Clark Foundation and WSP released <u>The Shared</u> <u>Path</u>, a report making the case for rapidly accelerating the uptake of low-traffic neighbourhoods in Aotearoa New Zealand to reduce emissions, improve road safety, and create connected urban communities. In 2021 we undertook a further project on the kinds of policy changes that could help Aotearoa New Zealand reduce emissions from private vehicles by enough to meet the net zero by 2050 target. We were particularly interested in how emissions reductions could be achieved without entrenching social and economic inequities, and further, how such policies could potentially *improve* equity The resulting report, <u>Te Ara</u> <u>Matatika</u>, was released on 18 November 2021. With a particular focus on cities, it explains why transport matters for equity and sets out a path for how we can fairly transition to the connected low-traffic cities we will need in the future. In addition to summarising key insights and recommendations, we have appended *Te Ara* <u>Matatika</u> in full as part of our submission.

## Reducing car dependence

The transport sector is our second-largest source of carbon emissions, and accounts for around 43% of domestic CO2 emissions. More than half these emissions come from private vehicles. The cumulative distance New Zealanders travel by car each year has increased steadily since 2011 and totalled 35.5 billion kilometres in 2019.<sup>1</sup> Reducing private vehicle use is increasingly seen as a key plank of effective climate change policy. Crucially, electric vehicles are included in this need to reduce car dependence and VKT. Relying heavily on electric vehicles to decarbonise transport will not reduce emissions quickly enough to meet our 2050 targets and leaves disadvantaged populations increasingly vulnerable to the risks of climate change.

## About The Helen Clark Foundation

The Helen Clark Foundation is an independent public policy think tank based in Auckland, New Zealand.

Building on the lifetime of public service by our patron Helen Clark, we aim to contribute to policy debates on how to achieve a fairer, more inclusive, and sustainable society. We are non-partisan.

The research behind this submission was produced in partnership with WSP.





<sup>&</sup>lt;sup>1</sup> Ministry of Transport: https://www.transport.govt.nz/statistics-and-insights/road-transport/sheet/vehicle-kms-travelled-vkt

Until recently, policy discussions about traffic reduction have tended to frame the issue as one of personal choice and leave it up to motivated individuals to seek alternatives to driving if they wish. In a social and physical environment that is often hostile to alternative modes, this will never not be enough to achieve the significant change required. Reducing traffic volumes should be an explicit objective of transport policy and decision-making. Forecasting tools should be developed to model the likely impact of new transport projects and investments on VKT, and strong weighting should be given to projects and interventions that are modelled to result in meaningful VKT reductions.

## Inequity in the transport system

Our current transport system is not equitable and contributes significantly to wider social and economic disadvantage. Common barriers to mobility in the current transport system include:

- Cost, including the costs of car ownership and maintenance, parking fees and fines, public transport or taxi fares, initial outlay to purchase a bike or scooter, or opportunity costs of work forgone due to inadequate transport.
- Accessibility, for example not living close to reliable public transport, not being able to physically board buses and trains, or not being able to drive, walk, or wheel for health or disability reasons.
- Safety, such as the risk of being harassed or assaulted on public transport, not feeling safe to walk or cycle because of traffic, or suffering injury or losing loved ones on the roads.
- Practicality, for example forgoing or delaying a trip because long congestion delays would defeat the purpose, public transport routes or timetables that do not service your destination at the time you need to travel, or having your bike stolen because of a lack of secure storage.

Those most likely to experience transport-related disadvantage and poverty include Māori, disabled people, people with low incomes, women, takatāpui, queer, and LGBTQI+ people, and minority ethnic groups including Pacific people. All these groups experience other forms of systemic disadvantage, and there is considerable overlap between them.

Low-income is an especially significant major driver of transport disadvantage. In 2019, households in the lowest income quintile spent 3.5 times more on transport than households in the highest income quintile as a proportion of their income (28% vs 8%).<sup>2</sup> Public transport provision also tends to be poorer in low-income neighbourhoods.<sup>3</sup>

It is difficult to quantify the opportunity cost of a highly inequitable transport system because there is not good data about the full extent of forgone trips, unmet transport need, or repressed demand. It is reasonable to assume that if the transport system prioritised equity, there would be widespread benefits, not only for those directly affected, but for our wider economy and society, including reduced demand for urgent healthcare and hospitalisations, fewer people killed or injured on the roads, productivity gains from more people in employment (especially disabled people), increased spending power of low-income households, improved public health, and safer public spaces.

Increasing equity in the transport system should be a key objective of both the ERP and wider transport policy and investment, on par with the imperative to reduce VKT from private vehicles. This will require the development of new and improved tools to measure the equity implications of transport projects and decisions.

# Risks of pursuing decarbonisation without adequately considering equity

In the absence of a strong equity approach, there are significant risks that decarbonisation in general, and VKT reductions in particular, could be pursued in ways that entrench existing disadvantage. These risks include:

- Costs falling on those already disadvantaged, for example poorly-targeted congestion pricing schemes that restrict the mobility of disadvantaged groups, with minimal impact on the transport patterns of those with greater resources.
- Benefits accruing to those already advantaged, for example upgrading public transport based on the habits and expectations of advantaged groups or implementing street-level changes in higher-income areas first.

<sup>&</sup>lt;sup>2</sup> Ministry of Transport: <u>https://www.transport.govt.nz/statistics-and-insights/transport-indicators/inclusive-access/</u>

<sup>&</sup>lt;sup>3</sup> Saeid Nazari Adli, Subeh Chowdhury, and Yoram Shiftan, "Justice in Public Transport Systems: A Comparative Study of Auckland, Brisbane, Perth and Vancouver," *Cities* 90 (July 1, 2019): 88–99, <u>https://doi.org/10.1016/j.cities.2019.01.031</u>

- Poorly designed new infrastructure, for example narrow cycle lanes in low-income areas, without adequately understanding the transport needs of the community or designing active transport infrastructure to remove barriers.
- 'Baked in' inaccessibility and unmet need, for example, designing new or improved public transport infrastructure based on current demand, rather than to trying address unmet transport need.
- Gentrification, when street-level changes or new public transport connections make previously low-income neighbourhoods more attractive, increase property prices, and displace long-term residents.

These risks – and others associated with an insufficiently equitable climate change response – must be avoided. Policies and projects that aim to reduce VKT will need to be assessed using robust tools to evaluate their equity implications – not only to mitigate their potential negative impacts, but to ensure that only projects that improve underlying fairness proceed. Using this metric, it will be important to identify when the benefits of a proposal are likely to accrue to those who are already advantaged, and either amend the proposal to extend the benefits to everyone or replace it with something fairer.

## The fair path

Our cities will need to look very different in future: they will need to be connected, localised urban communities in which people can access most of their needs close to home and have ready access to public and active transport options when they need to go further. Arriving at this outcome requires reprogramming the policy settings that govern transport, land use, and urban design now. Urban development policies and planning tools should aim to reduce the overall need to travel, shorten the distances between key destinations, and promote social connection.

Transport investment should be allocated according to the sustainable transport pyramid:



An equitable climate change response in the transport sector would promote walking, wheeling, public transport, and shared mobility options above private car use for the movement of people in almost all instances. Transport investment would be allocated accordingly. Investments that reduce demand for car travel, create active transport infrastructure, improve public transport, and maintain and improve existing roads would take precedence over the creation of new cardominated transport infrastructure.

# Overarching recommendation: 'Reprogramme' the transport system

Delivering a transport system that substantially reduces emissions from private vehicles and improves underlying equity in the transport system will require effectively 'reprogramming' the decision-making policies and process that govern transport and urban design. This should include:

• Developing new tools and methods to accurately evaluate both the equity and VKT impacts of transport decisions and ensuring that these tools are used to determine transport investment decisions.

- Gathering robust data that fills current knowledge gaps about transport and equity, especially about forgone trips, unmet need, and latent or suppressed demand that could be unlocked by more equitable policies and programmes.
- Enhancing how equity considerations influence decision-making, aiming not simply to mitigate negative impacts, but to actively improve the fairness of the transport system.
- Involving members of disadvantaged communities in transport decision-making, including by facilitating Te Tiriti
  partnership, ensuring representation from affected communities on decision-making bodies, and co-designing
  projects with those directly affected.
- Taking a more proactive and purposeful approach to community engagement to ensure a wider range of voices and perspectives are heard.

#### Our full recommendation about 'reprogramming' the transport system is:

1.1. In either the next GPS on Land Transport, or a new national transport strategy, set an ambitious and specific vision for the transport system that emphasises the importance of universal access, affordability, safety, reducing emissions, and improving wellbeing.

For example: "Everybody in Aotearoa New Zealand can get where they need to go affordably, accessibly, and on time, with a meaningful choice of safe options that meet their needs, protect the climate, and promote wellbeing."

- 1.2. Set at least two strategic priorities in support of this vision that include making the transport system work better for those currently disadvantaged and reducing collective dependence on private cars as the main form of urban transport.
- 1.3. Comprehensively integrate the Transport Outcomes Framework into the GPS (or new strategy) and into Waka Kotahi New Zealand Transport Agency's investment decision-making framework, so that the outcomes sought *are* the strategic priorities, and transport policy and investment decisions are actively determined by them (not just assessed against them).
- 1.4. Introduce legislation to support local authorities and transport agencies to make street-level changes that improve accessibility and reduce traffic volumes, including creating experimental traffic orders to encourage the creation of low-traffic neighbourhoods at scale.
- 1.5. When it is next updated, align the Road to Zero Road Safety Strategy with this vision by incorporating improved equity and reduced car dependence as road safety priorities.
- 1.6. Direct the board of Waka Kotahi New Zealand Transport Agency to:
  - 1.6.1.Shift from a 'predict-and-provide' investment model based on current assumptions about car traffic growth, to a 'decide and provide' investment framework based on reducing VKT, increasing mode-share of active and public transport, and maximising opportunities for people to live, work and play in their local communities.
  - 1.6.2. Include analysis of unmet mobility needs in its investment decision-making framework.
  - 1.6.3.Require local authorities to gather data about unmet mobility needs and to provide before and after evaluations of equity outcomes as a condition of receiving transport funding subsidies.
- 1.7. Direct Te Manatū Waka Ministry of Transport to:
  - 1.7.1.Further develop and refine methods and tools to assess the equity and VKT reduction implications of transport decisions.
  - 1.7.2.Embed and socialise these tools across the transport sector and actively use them to assess new projects, prioritise work programmes, and allocate investment.
  - **1.7.3.**Gather or commission research that fills current knowledge gaps about transport equity, especially about forgone trips, unmet need, and latent or suppressed demand for mobility from disadvantaged groups.

## Responses to questions from the consultation document

In the following table we comment on some questions in the consultation document and make specific recommendations where relevant. We have not answered every question.

| Topic and question  | Comment and relevant recommendations   |
|---|--|
| Working with Te Tiriti<br>partners  | With regard to partnering with iwi/Māori on national decarbonisation plans and strategies, relevant recommendations from <i>Te Ara Matatika</i> include:   |
| Questions 8-12  | 2.1. Work in partnership with Māori to uphold its Te Tiriti o Waitangi obligations in the transport system. This could include:  |
|   | 2.1.1. Developing specific strategies to improve transport outcomes for Māori.   |
|   | 2.1.2. Setting requirements for Māori representation on transport decision-making bodies.  |
|   | 2.1.3. Supporting hapū, iwi, and kaupapa Māori organisations to play a larger part in transport decision-making and governance, for example by providing resources to support Māori organisations to upskill on transport issues, or by ensuring that mana whenua views are always gathered and listened to on projects in their rohe. |
|   | 2.1.4. Funding kaupapa Māori community transport solutions like marae-based shuttles to provide healthcare access or kōhanga reo pick-up and drop-off services.  |
|   | 2.3. We also recommend that local authorities and regional transport governance bodies:  |
|   | 2.3.1. Apply the principles of tika (right and just) transition and use the tika transition toolbox to evaluate all transport projects and investments. <sup>4</sup>   |
| Equitable transitions strategy  | We agree with the objectives but recommend that a specific objective be added about<br>improving the underlying fairness of the transport system.  |
| 13. Do you agree with<br>the objectives for an<br>Equitable Transitions<br>Strategy as set out by<br>the Climate Change<br>Commission? What<br>additional objectives<br>should be included? | Furthermore, we strongly recommend that the final objective is made more ambitious: rather<br>than simply seeking to minimise negative impacts of new policies, we should be seeking to<br>actively increase equity and reduce disadvantage as part of our climate change response.  |
| 14. What additional<br>measures are needed  | Specific recommendations from Te Ara Matatika that relate to this question include:  |
| to give effect to the<br>objectives noted by<br>the Climate Change  | 1.7.1. [Ministry of Transport] Further develop and refine methods and tools to assess the equity and VKT reduction implications of transport decisions.  |
| Commission, and any<br>other objectives that<br>you think should be   | 1.7.2. Embed and socialise these tools across the transport sector and actively use them to assess new projects, prioritise work programmes, and allocate investment.  |
| included in an<br>Equitable Transitions<br>Strategy?  | 1.7.3. Gather or commission research that fills current knowledge gaps about transport equity, especially about forgone trips, unmet need, and latent or suppressed demand for mobility from disadvantaged groups.   |

<sup>&</sup>lt;sup>4</sup> For more about the Tika Transition Toolbox, see *A Careful Revolution*, ed. David Hall (BWB, 2019): <u>https://www.bwb.co.nz/books/careful-revolution/</u>. The toolbox is also reproduced in full in our 2020 report *The Shared Path*: <u>https://helenclark.foundation/publications-and-media/the-shared-path-people-not-cars-at-the-heart-of-communities/</u>

|  | 2.1.4. Fund kaupapa Māori community transport solutions like marae-based shuttles to provide healthcare access or kōhanga reo pick-up and drop-off services.   |
|--|--|
|  | 2.2. Ensure representation from currently disadvantaged communities and individuals on transport governance and decision-making bodies.  |
|  | 2.3.2. Co-design new urban transport infrastructure and street-level changes to improve accessibility and reduce traffic with affected communities.  |
|  | 4.2. Coordinate efforts between government agencies to align transport, climate change, housing, land use, taxation, and income policies to increase equity, reduce all forms of social and economic disadvantage, and meet emissions reduction targets. Focus these efforts in particular on:   |
|  | 4.2.1. Ensuring equity considerations are central to the final Emissions Reduction Plan and supported by specific actions to increase the fairness of the transport system.  |
|  | 4.2.2. Aligning housing, transport, and land use policies to reduce the overall need to travel, reallocate street space to increase accessibility and reduce VKT, and reduce the risk of gentrification.   |
|  | 4.2.3. Ensuring people have adequate income to participate fully in society.   |
| 15. What models and<br>approaches should be<br>used in developing an<br>Equitable Transitions<br>Strategy to ensure that<br>it incorporates and<br>effectively responds to<br>the perspectives and<br>priorities of different<br>groups? | 4.3. Establish a fund to encourage the development and expansion of low-carbon, shared community transport solutions to reduce the need for individual vehicle ownership and help communities to meet self-defined priorities. This could include (but is not limited to) ideas like shared community vehicles, affordable mobile shopping and delivery options, school and ECE pick-up services, late-night shuttles for shift workers, or communal transport for sports clubs and cultural activities.   |
|  | 4.4. Target future financial incentives to encourage mode-shift, such as subsidised public transport fares and rebates for zero-emissions vehicles, towards those who are currently most disadvantaged in the transport system.  |
|  | It will be vital to prioritise robust engagement to understand the lives, transport patterns, unmet needs, values and concerns of diverse populations, and to co-design changes that meet each community's specific needs. We described what this best-practice engagement can involve in our 2020 report <i>The Shared Path</i> :   |
|  | "[Start] with preliminary conversations to identify community views, attitudes, needs and concerns, and [be] open to hearing about and acting on community priorities beyond the immediate project. Engage with mana whenua from the earliest opportunity. Create opportunities to share preliminary designs and ideas with local people in the places where they are, rather than putting things online and waiting for people to make submissions. Set up market stalls, knock on doors, and hang out in high foot traffic areas to ask questions and share concepts. Conduct proactive local engagement to find out how people feel about their local streets and neighbourhoods and test key concepts. Ensure local disabled people are heard, build support, and emphasise community-wide benefits. When a project is in the trial phase, be nimble and responsive to early concerns and be prepared to make changes and improvements over the life of the project. Be responsive to, and respectful of, local concerns." |
| Planning   | Recommendations from Te Ara Matatika relevant to this question include:  |
| 34. What more do we<br>need to do to promote<br>urban intensification,<br>support low-emissions  | 1.4. Introduce legislation to support local authorities and transport agencies to make street-<br>level changes that improve accessibility and reduce traffic volumes, including creating<br>experimental traffic orders to encourage the creation of low-traffic neighbourhoods at scale.   |
|  |  |

land uses and concentrate intensification around public transport and walkable neighbourhoods?

#### Transport

52. Do you support the target to reduce VKT by cars and light vehicles by 20% by 2035 through providing better travel options, particularly in our largest cities, and associated actions? 3.2. Issue guidance under the National Policy Statement on Urban Development that emphasises the need for new developments to reduce the overall need to travel, shorten the distances between key destinations, and promote social connection in urban communities.
3.3. Ensure that these principles underpin all Kāinga Ora-led urban developments, and encourage Kāinga Ora to pilot the 20-minute city approach in Aotearoa New Zealand.<sup>5</sup>

We support this target, although we think it could be more ambitious given the scale of the change required and the proportion of transport-related emissions from private vehicles. We support other submitters who have proposed a 20% reduction by 2030 and a 30% reduction by 2035.

# Integrate land-use, urban development and transport planning and investments to reduce transport emissions

We support this action. Specific recommendations from *Te Ara Matatika* that are relevant to these actions include:

3.1. Make reduction in VKT an explicit goal of new development as part of the Resource Management Act reform currently underway and require transportation impacts to be mitigated through a net increase in walking, cycling and public transport that is greater than any forecast increase in car trips.

3.2. Issue guidance under the National Policy Statement on Urban Development that emphasises the need for new developments to reduce the overall need to travel, shorten the distances between key destinations, and promote social connection in urban communities.

#### Improve the reach, frequency, and quality of public transport

We strongly support this proposed action. Importantly new and improved public transport should be designed based not on current demand, but on unmet need. Specific recommendations include:

1.6.1. Shift from a 'predict-and-provide' investment model based on current assumptions about car traffic growth, to a 'decide and provide' investment framework based on reducing VKT, increasing mode-share of active and public transport, and maximising opportunities for people to live, work and play in their local communities.

1.6.2. Include analysis of unmet mobility needs in Waka Kotahi's investment decision-making framework.

1.6.3. Require local authorities to gather data about unmet mobility needs and to provide before and after evaluations of equity outcomes as a condition of receiving transport funding subsidies.

4.8. Design new and upgraded urban transport infrastructure based on current unmet mobility needs, rather than on current patterns of demand.

4.9. Incentivise more affordable, reliable, and accessible public transport for those currently disadvantaged through reinvesting fares in subsidised transport for low-income people, alongside investment in better public transport in low-income communities.

Provide national direction to deliver a step-change in walking and cycling rates

We support this action. Specific recommendations include:

<sup>&</sup>lt;sup>5</sup> For more about 20-minute cities, see: <u>https://www.wsp.com/en-NZ/insights/the-20-minute-city-an-equitable-solution</u>

1.4. Introduce legislation to support local authorities and transport agencies to make streetlevel changes that improve accessibility and reduce traffic volumes, including creating experimental traffic orders to encourage the creation of low-traffic neighbourhoods at scale.

3.1. Make reduction in VKT an explicit goal of new development as part of the Resource Management Act reform currently underway and require transportation impacts to be mitigated through a net increase in walking, cycling and public transport that is greater than any forecast increase in car trips.

3.4. Use appropriate policy and regulatory tools to mandate urban planning and placemaking that reduces the overall need to travel, shortens the distances between key destinations, and promotes social connection.

4.6. Pilot innovations like reallocated street space, new active transport infrastructure, and incentives to use active and public transport in a wide range of settings, to ensure that the results are representative of diverse communities and reflect their actual transport challenges.

From our 2020 report *The Shared Path,* we also recommend increasing investment in active transport infrastructure to at least 20 percent of the total transport budget, as recommended by the United Nations Environment Programme.<sup>6</sup>

Making school travel greener and healthier

We support this action.

From our 2020 report *The Shared Path,* we recommend providing additional funding for active school travel initiatives such as walking school buses.

#### Improve access and travel choice for the transport disadvantaged

We support this action. Specific recommendations include:

4.8. Design new and upgraded urban transport infrastructure based on current unmet mobility needs, rather than on current patterns of demand.

4.9. Incentivise more affordable, reliable, and accessible public transport for those currently disadvantaged through reinvesting fares in subsidised transport for low-income people, alongside investment in better public transport in low-income communities.

#### Reduce public transport fares

We support this recommendation. Specifically, we recommend:

5.1. Consider a bold intervention to incentivise rapid mode shift, such as making public transport free for Community Services Card holders and/or young people under 25 and committing significant new investment to improving public transport frequency, reliability, and accessibility in low-income areas.

#### Enable congestion pricing and investigate how we can use other pricing tools

We support this recommendation, with the strong advice that it will be critical to ensure that equity is at the heart of the design and specific settings of any pricing tools to reduce transport-related emissions. Specific recommendations include:

4.1. Ensure that forthcoming legislation to enable congestion pricing schemes in all Aotearoa New Zealand cities emphasises the need for these schemes to maximise equity by redirecting revenue into more efficient, frequent, direct public transport services, beginning with low-income communities.

<sup>&</sup>lt;sup>6</sup> UNEP, 2016: <u>http://www.unep.org/transport/sharetheroad/PDF/globalOutlookOnWalkingAndCycling.pdf</u>

4.4. Target future financial incentives to encourage mode-shift, such as subsidised public transport fares and rebates for zero-emissions vehicles, towards those who are currently most disadvantaged in the transport system.

4.5. Ensure equity considerations are paramount in decisions about specific operation of any future congestion pricing schemes (including the scheme currently proposed for Tāmaki Makaurau Auckland).

<u>Require further roadway expansion and new highways to be consistent with climate change</u> <u>targets</u>

We support this action. In particular, as part of 'reprogramming' the transport system, we recommend:

1.1. In either the next GPS on Land Transport, or a new national transport strategy, set an ambitious and specific vision for the transport system, that emphasises the importance of universal access, affordability, safety, reducing emissions, and improving wellbeing.

1.2. Set at least two strategic priorities in support of this vision that include making the transport system work better for those currently disadvantaged and reducing collective dependence on private cars as the main form of urban transport.

1.3. Comprehensively integrate the Transport Outcomes Framework into the GPS (or new strategy) and into Waka Kotahi New Zealand Transport Agency's investment decision-making framework, so that the outcomes sought are the strategic priorities, and transport policy and investment decisions are actively determined by them (not just assessed against them).

# Te Ara Matatika | The Fair Path

Why transport matters for equity, and how Aotearoa New Zealand can fairly transition to the connected low-traffic cities we need for a decarbonised future.

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## About the Helen Clark Foundation

The Helen Clark Foundation is an independent public policy think tank based in Tāmaki Makaurau Auckland, at the Auckland University of Technology. It is funded by members and donations. We advocate for ideas and encourage debate; we do not campaign for political parties or candidates. Launched in March 2019, the Foundation issues research and discussion papers on a broad range of economic, social, and environmental issues.

#### Our philosophy

New problems confront our society and our environment, both in New Zealand and internationally. Unacceptable levels of inequality persist. Women's interests remain underrepresented. Through new technology we are more connected than ever, yet loneliness is increasing, and civic engagement is declining. Environmental neglect continues despite greater awareness. We aim to address these issues in a manner consistent with the values of former New Zealand Prime Minister Helen Clark, who serves as our patron.

#### Our purpose

The Foundation publishes research that aims to contribute to a more just, sustainable, and peaceful society. Our goal is to gather, interpret and communicate evidence in order to both diagnose the problems we face and propose new solutions to tackle them. We welcome your support: please see our website <u>www.helenclark.foundation</u> for more information about getting involved.

## About WSP in New Zealand

As one of the world's leading professional services firms, WSP provides strategic advisory, planning, design, engineering, and environmental solutions to public and private sector organisations, as well as offering project delivery and strategic advisory services. Our experts in Aotearoa New Zealand include advisory, planning, architecture, design, engineering, scientists, and environmental specialists. Leveraging our Future Ready<sup>®</sup> planning and design methodology, WSP use an evidence-based approach to helping clients see the future more clearly so we can take meaningful action and design for it today. With 55,000 talented people globally, including over 2,000 in Aotearoa New Zealand located across 40 regional offices, we are uniquely positioned to deliver future ready solutions, wherever our clients need us. See our website at wsp.com/nz.

## Whakataukī

He aha te huarahi? I runga i te tika, te pono, me te aroha.

What is the pathway? It is doing what is right, with integrity and compassion.

## He mihi: Acknowledgements

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# Glossary of te reo Māori terms<sup>1</sup>

| Нарū                 | Kinship group, clan, tribe, subtribe – section of a large kinship group and the<br>primary political unit in traditional Māori society. A number of whānau<br>sharing descent from a common ancestor, usually being named after the<br>ancestor, but sometimes from an important event in the group's history. |
|----------------------|--|
| Iwi                  | Extended kinship group, tribe, nation, people – often refers to a large group descended from a common ancestor and associated with a distinct territory.   |
| Kaitiakitanga        | Guardianship, stewardship.   |
| Karanga              | A ceremonial call of welcome to visitors onto a marae or equivalent venue.   |
| Kaumatua             | An adult, elder, or elderly person – someone of status within the whānau.  |
| Kaupapa Māori        | A Māori approach, Māori principles; a philosophical doctrine, incorporating the knowledge, skills, attitudes and values of Māori society.  |
| Kōhanga reo          | Māori language preschool.  |
| Kura                 | School.  |
| Mana whenua          | Territorial rights, authority, or jurisdiction over land or territory. Also refers<br>to hapū or iwi with mana whenua, whose history and legends are based in<br>the lands they have occupied over generations.  |
| Marae                | Open area in front of a meeting house where formal events take place; often used to describe the buildings that make up a place of cultural significance.  |
| Papakāinga           | Original home, home base, village; in relation to housing, refers to<br>communal housing where whānau who whakapapa to the land can live<br>intergenerationally according to Te Ao Māori.  |
| Rohe                 | Boundary, district, region, territory, area (of land).   |
| Takatāpui            | A traditional term meaning 'intimate companion of the same sex,' more recently reclaimed to embrace all Māori who identify with diverse sexes, genders and sexualities.  |
| Te Ao Māori          | The Māori world.   |
| Te Ara Matatika      | The fair path; a path that is right, just, and ethical.  |
| Te Tiriti o Waitangi | The Treaty of Waitangi (Māori version).  |
| Tika                 | Correct, true, upright, right, just, fair.   |
| Whakapapa            | Genealogy, genealogical table, lineage, descent.   |

<sup>&</sup>lt;sup>1</sup> In alphabetical order. Most definitions adapted from <u>https://maoridictionary.co.nz</u>, except takatāpui, which is adapted from <u>https://takatapui.nz/</u>.

| Whānau         | Extended family – the primary economic unit of traditional Māori society.   |
|----------------|---|
| Whanaungatanga | Relationship, kinship, family connection; a relationship through shared experiences and working together which provides a sense of belonging. |
| Wharekai       | Dining hall.  |
| Whenua         | Land, ground, territory.  |

# Glossary of specialist terms

| Accessibility                              | How easy it is for people to participate in society and take up social and<br>economic opportunities, such as work, education and healthcare. Enabling<br>people to access important destinations is sometimes considered the primary<br>purpose of the transport system.   |
|--|---|
| Car dependency                             | When individuals or communities are reliant on cars for mobility. Car-centric<br>urban planning perpetuates car dependency by making it difficult to get around<br>by other modes and prioritising cars in the allocation of street space.  |
| Decarbonisation                            | The reduction of carbon, and the transition to an economic system that specifically reduces and compensates emissions of carbon dioxide.  |
| Forced car<br>ownership                    | When low-income households retain car ownership due to a lack of alternative transport options, even though the associated cost can be a large proportion of the household budget and have negative health and wellbeing consequences.  |
| Just transition                            | Recognises that responding effectively to climate change will involve both opportunities and costs, and that transitioning to a low-emissions economy will only succeed when these costs and opportunities are distributed fairly.  |
| Kāinga Ora                                 | Kāinga Ora – Homes and Communities. A Crown entity created in 2019 bringing<br>together the former Housing New Zealand, its development subsidiary HLC, and<br>the KiwiBuild Unit. Governed by a statutory board appointed by the Ministers of<br>Housing and Finance. Responsible for delivering the Government's state<br>housing build programme, upgrading existing housing stock, leading large-scale<br>urban developments including affordable and market housing, and acting as<br>the landlord for social housing tenancies. |
| Mobility justice                           | An overarching theory that goes beyond distributive approaches to transport to bring into focus unjust power relations and uneven mobility.   |
| Net zero<br>emissions                      | The state at which greenhouse gas emissions into the atmosphere are balanced<br>by greenhouse gas emissions taken out of the atmosphere. Domestically, it<br>refers to each nation balancing its own emissions with measures to offset them.  |
| Te Manatū<br>Waka Ministry<br>of Transport | The Government's 'system lead' on transport, responsible for providing advice<br>on how the transport system needs to change to support the transport needs of<br>New Zealanders and the Government's signalled priorities. Functions include<br>reviewing legislation and regulation governing the transport system and<br>monitoring and evaluating transport system performance against key<br>indicators.   |
| Transport<br>disadvantage                  | Disadvantage caused by a lack of transport options, for example not owning a car or not living near reliable public transport.  |
| Transport<br>equity                        | When the benefits and costs of transport policies and projects are fairly distributed between different groups. Equitable policies allocate resources according to need rather than treating all groups the same.   |

| Transport<br>justice                              | Benefits and costs of transport policies are fairly distributed, and in addition, decision-making processes are fair, representative, and seek to ensure the transport system meets the basic transport needs of all people.   |
|---|--|
| Transport<br>poverty                              | Poverty induced by people paying more than they can afford for their mobility<br>(for example taking out a high-interest loan to buy a car or spending a high<br>proportion of their income on petrol, bus fares, or other travel costs).  |
| Transport-<br>related social<br>disadvantage      | Missing out on opportunities (including opportunities for employment and social connection) because of a lack of practical transport choices.  |
| VKT   | Vehicle kilometres travelled – a measure of total kilometres travelled each year<br>by different vehicle types. Can be expressed as a cumulative total (measured in<br>billions of kilometres), or a per capita average.   |
| Waka Kotahi<br>New Zealand<br>Transport<br>Agency | The New Zealand Transport Agency, a Crown entity governed by a statutory<br>board appointed by the Minister of Transport. Responsible for managing the<br>state highway system, overseeing the planning and delivery of public transport,<br>and managing the funding of the land transport system. Operates at arms'<br>length from government, but is required to make investments that deliver on<br>the Government's policy priorities (as signalled in the Government Policy<br>Statement on Land Transport every three years). |

## Executive summary

Everyone in Aotearoa New Zealand should be able to get where they need to go affordably, accessibly, and in good time, with a meaningful choice of options that meet their needs, protect the climate, and promote individual and collective wellbeing.

In this report, we make the case that realising this vision (or one like it) should be the primary purpose of the transport system.

At present, our inequitable, car-dominated transport system constrains mobility and limits opportunity for thousands of people and is the second-largest source of domestic carbon emissions. It also kills or injures thousands of people each year, undermines public health, creates harmful air and noise pollution, and is detrimental to our collective mental wellbeing.

To transition to a transport system in which everyone – regardless of income, ethnicity, disability, or gender – can get where they need to go in ways that protect the climate and promote wellbeing, transport policy and investment will need to focus on two things:

- 1. Making the transport system work better for those who are currently disadvantaged; and
- 2. Reducing our collective dependence on cars as our main form of urban transport.

In this report, we set out why transport matters for equity, illustrate why reducing car dependence is the key to decarbonising urban transport, explain the risks of pursuing rapid decarbonisation without adequately considering equity, and lay out a path for how Aotearoa New Zealand can transition to the connected, low-traffic cities we need in the future.

### Why focus on cities?

While we acknowledge that there are also significant equity and decarbonisation challenges in rural and provincial transport, in this report we restrict our analysis primarily to urban settings.

We take this urban focus because nearly three quarters of Aotearoa New Zealand's population growth in the next 30 years will happen in cities. Tāmaki Makaurau Auckland alone will account for half this growth. By 2048, there will be almost one million more people living in our cities than there were in 2018.

This growth places increasing pressure on our urban infrastructure and creates demand for new and improved transport infrastructure. Te Waihanga, the New Zealand Infrastructure Commission, notes that the major challenges facing our cities include:

- High levels of traffic congestion.
- Poor availability of public transport and walking and cycling options.
- Urban design that leads to poor quality-of-life.

These challenges can be addressed by creating connected urban communities that provide greater access to employment, social and recreation opportunities. How the transport system is configured, and what it is programmed to prioritise, will be critical to addressing these challenges.

### Why focus on cars?

Aotearoa New Zealand has been committed to the target of net zero emissions by 2050 for several years and entrenched this target in domestic law with the passage of the Climate Change Response

(Zero Carbon) Amendment Act 2019. In late 2021, at the COP26 UN Climate Change Conference in Glasgow, Climate Change Minister James Shaw also committed to reduce New Zealand's emissions by 50 percent from 2005 levels by 2030.

The transport sector is our second-largest source of carbon emissions, and accounts for around 43 percent of domestic CO2 emissions. More than half these emissions come from private vehicles.

Reducing private vehicle use is increasingly seen as a key plank of effective climate change policy. The Government is currently consulting on what to include in its first Emissions Reduction Plan (ERP), and the consultation document identifies "reducing reliance on cars and supporting people to walk, cycle and use public transport" as the first of three target areas for decarbonising transport. It also proposes a specific target to "reduce vehicle kilometres travelled (VKT) by cars and light vehicles by 20 percent by 2035 through providing better travel options, particularly in our largest cities."

It is increasingly accepted by experts and decision-makers that it will not be possible to meet our emissions reduction targets without purposefully reducing widespread car dependence. As the ERP consultation document notes, "the scale of change to achieve these reductions and complete decarbonisation cannot be overstated."

## Why focus on equity?

Our current transport system is not equitable and contributes significantly to wider social and economic disadvantage. Common barriers to mobility in the current transport system include:

- Cost, including the costs of car ownership and maintenance, parking fees and fines, public transport or taxi fares, the initial outlay required to purchase a bike or scooter, or opportunity costs of work forgone due to inadequate transport.
- Accessibility, for example not living close to reliable public transport, not being able to
  physically board buses and trains, or not being able to drive, walk, or wheel for health or
  disability reasons.
- Safety, such as the risk of being harassed or assaulted on public transport, not feeling safe to walk or cycle because of traffic, or suffering injury or losing loved ones on the roads.
- Practicality, for example forgoing or delaying a trip because long congestion delays would defeat the purpose, public transport routes or timetables that do not service your destination at the time you need to travel, or having your bike stolen because of a lack of secure storage.

While everyone will experience some constraints to their mobility from time to time, having your mobility consistently constrained creates ongoing disadvantage and poverty.

People experience transport disadvantage when they lack practical transport options, and transport poverty when they are forced to spend an unreasonable proportion of their income on transport. Transport-related social disadvantage is when people miss out on economic and social opportunities because of a lack of transport options.

Those most likely to experience transport-related disadvantage and poverty include Māori, disabled people, people with low incomes, women, takatāpui, queer, and LGBTQI+ people, and members of minority ethnic groups including Pacific people. All these groups experience other forms of systemic disadvantage, and there is considerable overlap between them. The current transport system not only causes inequitable access to mobility but exacerbates wider economic and social inequity.

Achieving **transport equity** (when the costs and benefits of transport are distributed fairly) and **transport justice** (when everyone's mobility needs are met and transport decision-making is fair and representative) will benefit not only those who are currently disadvantaged, but everyone in Aotearoa New Zealand.

## Risks of pursuing decarbonisation without adequately considering equity

There are significant risks that decarbonisation in general, and VKT reductions in particular, could be pursued in ways that entrench existing disadvantage. These risks include:

- Costs falling on those already disadvantaged, for example poorly-targeted congestion pricing schemes that restrict the mobility of disadvantaged groups, while having minimal impact on the transport patterns of those with greater resources.
- Benefits accruing to those already advantaged, for example upgrading public transport based on the habits and expectations of advantaged groups or implementing street-level changes that enhance neighbourhood appeal in high-income areas first.
- Unwanted or inappropriate new infrastructure, for example creating new cycle lanes in lowincome areas, without first understanding the first-order transport needs of the community or the actual barriers to cycling.
- 'Baked in' inaccessibility and unmet need, for example, designing new or improved public transport infrastructure based on current demand, rather than to trying address unmet transport need.
- Gentrification, when street-level changes to increase accessibility and reduce traffic or new public transport connections make previously low-income neighbourhoods more attractive, increase property prices, and displace long-term residents.

These risks – and others associated with an insufficiently equitable climate change response – must be avoided. With Aotearoa New Zealand's endorsement of the International Just Transition Declaration at COP26, our international commitments now also include a promise to avoid them.

## Te Ara Matatika: the fair path

If Aotearoa New Zealand is to honour its commitment to a just transition, achieve transport equity, and meet net zero emissions targets, our cities will need to look very different in future.

Increasingly, international and local evidence suggests the 'fair path' leads away from car-dominated cities with a 'hub and spoke' model of commuting from outlying suburbs into the CBD, towards connected, localised urban communities in which people can access most of their needs close to home and have ready access to public and active transport options when they need to go further.

Arriving at these equitable, low-traffic cities in the future requires reprogramming the policy settings that govern transport, land use, and urban design now. We need to create urban environments that reduce the overall need to travel, shorten the distances between key destinations, and promote social connection. We also need to overhaul the way we allocate transport investment.

Fair, sustainable transport policy should promote walking, wheeling, public transport, and ride share options above private car use for the movement of people. Transport investment should also be allocated accordingly. Investments that reduce demand for car travel, create active transport infrastructure, improve public transport, and maintain and improve existing roads should take precedence over the creation of new car-dominated transport infrastructure.

# Summary of recommendations

We have five overarching recommendations that would help to fairly transition Aotearoa New Zealand's cities to the connected, low-traffic communities we need for a decarbonised future. Under each, we direct specific recommendations to relevant Ministers and agencies. These recommendations are summarised below, and appear in full starting on page 54.

## 1. 'Reprogramme' the transport system

- Set an ambitious vision for the transport system.
- Make improving equity and reducing car dependence key priorities in support of this vision.
- Integrate this vision and priorities into all relevant transport policies and strategies.
- Introduce legislation to make it easier for councils to make low-traffic interventions at scale.
- Align the road safety strategy with this vision.
- Change how investment is allocated to deliver against these two priorities.
- Require the Ministry of Transport and Waka Kotahi New Zealand Transport Agency to use new assessment and decision-making tools that measure equity and VKT impact of transport projects.
- Commission research that fills current knowledge gaps about transport equity.

### 2. Make sure the transition is tika (right and just)

- Partner with Māori to uphold Te Tiriti o Waitangi obligations in the transport system.
- Ensure representation from disadvantaged communities in transport decision-making.
- Apply the principles of a tika transition to all transport and climate change decisions.
- Co-design new urban transport infrastructure with affected communities.

### 3. Reduce the overall need to travel

- Make reducing VKT an explicit goal of new developments as part of RMA reform.
- Require urban planning that reduces the overall need to travel, shortens distances between key destinations, and promotes social connection.
- Pilot this approach in Kāinga Ora-led developments, using the principles of 20-minute cities.

### 4. Make sure the costs and benefits fall in the right place

- Ensure future congestion pricing schemes maximise equity.
- Align transport, climate change, housing, land use, taxation, and income policies and coordinate better between government agencies.
- Encourage and fund low-carbon, shared community transport solutions.
- Make sure policies to incentivise mode-shift benefit those who are currently disadvantaged.
- Pilot innovative solutions in a wide range of settings and communities.
- Design transport infrastructure based on unmet need, not current demand.
- Make public transport cheaper and better for low-income communities.

### 5. Kickstart the transition

• Make a bold intervention to incentivise rapid mode shift, such as making public transport free for a sizeable target group (such as young people under 25 and/or Community Services Card holders).

# Two stories to open this report Hana's story: 2021

Hana is 21. She lives in Onehunga, in Tāmaki Makaurau Auckland, with her parents, grandmother, and three younger siblings. Hana is studying full-time to be a social worker at Unitec in Waitākere, which involves face to face classes three days a week, and some distance learning from home.

Hana receives a student allowance of \$203.11 a week after tax. She also works ten hours at night, cleaning offices in the CBD. This pays minimum wage and is taxed at the secondary tax rate of 17.5 percent, so Hana gets about \$160 a week from this job after tax. She aims to give about \$150 a week to her parents to help with rent, food, and power, leaving her with about \$210 of disposable income.

Hana commutes to campus three days a week. Driving is much quicker than the two buses it takes to get there by public transport, and at \$6-8 a day, student parking is almost as cheap as a return bus fare (\$5.50), so Hana decided to buy a car. She had another good reason for this too: her own car offered a safe way to get to and from her late-night cleaning job.

Unfortunately, Hana had a poor credit rating from bad experience with a mobile shopping van a couple of years ago, so her bank wouldn't lend her \$3000 for her 2005 Nissan Teana. Instead, Hana got a loan from a high-interest lender with offices in her neighbourhood. The repayments are \$35 a week, and she is paying 20 percent interest. It will take her seven years to pay off the loan, and by then she will have paid a total of \$5400. Hana's petrol costs are about \$60 a week.

When Hana bought the car, the registration and WOF were paid in advance. When they expired, Hana paid \$30 to renew the registration for three months, but the car failed its warrant because it needed two new tyres. Hana couldn't afford the \$200 right away, so she didn't buy them.

Hana knew it was a bad idea to drive without a WOF, so she switched to catching the bus to campus. This can be slow in peak hour, especially because she has to change buses on the way, so she leaves home at about 7.20am to get to her first lecture at 9am and is sometimes still a few minutes late.

She tried using public transport to get to her cleaning job too, but the night services are infrequent, and sometimes she waited up to half an hour in the dark. After one nasty experience being followed to the bus stop, she spent \$25 on an Uber – losing almost half the earnings from her shift.

Eventually, Hana felt so uncomfortable that she started taking her car to her night job, even though she still hadn't replaced the tyres. Last week, the inevitable happened: she got a \$200 fine for having no warrant, and an additional \$150 fine for worn tyres. After her initial despair, Hana negotiated to pay the fines off in instalments – \$35 a week over ten weeks.

Now, Hana spends \$120 a week on transport-related costs: \$50 on bus fares and \$70 on repaying the loan and fines for a car she isn't using. This is about 33 percent of her weekly income. After giving her parents \$150 to contribute to the family finances, Hana has \$93 left. She spends \$10 a week on an endless data plan so she can study online at home (Hana's family doesn't have wifi), and tries to put \$20 aside for the new tyres, which she's still hoping to buy.

Hana can't risk driving again until she has a WOF, so for now she has parked the car on her parents' lawn. They are not happy about this, and nor is their landlord, but she can't park it on the street in case she gets another ticket. She is back to catching the train to her cleaning job and feeling unsafe.

### Aisha's story: 2040

Like Hana, Aisha is 21 and lives in a large city with her whānau. They live in a papakāinga community that was built about fifteen years ago as a joint initiative of mana whenua, the council, and Kāinga Ora. Their whare houses Aisha, her mum, and her two siblings, and her grandmother lives nearby in a kaumatua flat that is part of the same development. Aisha's mum is working towards home ownership, but she will not hold freehold title. If they decide to move in the future, they can cash out the equity they have built up, but not sell on the open market. Other houses and units in the community are social rentals, and most residents whakapapa to mana whenua.

The community produces net zero emissions and there are no cars beyond the perimeter. Aisha's whānau and their neighbours move between each other's homes and the communal facilities, which include a wharekai, meeting house, and play area that is visible from all the houses. The wide, covered paths between the buildings allow for walking, slow wheeling (like little kids on bikes and scooters, and non-powered wheelchairs), and faster wheeling (like powered mobility scooters, e-scooters, and bikes).

A few residents have cars, which they park and charge at the perimeter in dedicated spaces (though they pay extra unless they can't use other transport modes). Most use one of several communal evehicles when they need to travel longer distances or transport bulky items. These are also used as community shuttles at nights and weekends, and there is a roster of residents with current drivers' licenses to do a monthly shift.

There is a bus stop right by the main entrance to the community, and buses come past every 5-10 minutes to service local destinations like schools, the village shopping area, and community facilities. They also connect to the city-wide rail network.

Most days, Aisha takes a bus and a train to get to university where she is studying to be a teacher. The ticketing is integrated. She only waits a couple of minutes to transfer, and as a student, her public transport is free. It takes about 25 minutes.

The suburb is also connected to a wide, separated active travel network. About once a week, Aisha bikes to a park or the beach with her three younger cousins (who also live in the community) to give her Aunty a rest. They can ride two-abreast so they can talk on the way and Aisha can keep an eye on the younger kids.

Aisha receives a student allowance indexed to the living wage that matches the national guaranteed minimum income. She doesn't need to work on top of this, but chooses to do one shift a week waitressing for a catering company because she is saving for a trip to Rarotonga with her friends to celebrate when they graduate next year. If she finishes work after last bus, or goes out late with friends, she calls the community shuttle and someone picks her up, no questions asked.

# Part 1: The Fair Path – why transport matters for equity

Being able to get where you need to go – to get to work or school on time, do your own grocery shopping, go to the doctor when you are sick, or visit your friends and family – is both a basic need, and a human right.<sup>2</sup>

Everyone in Aotearoa New Zealand should be able to get where they need to go affordably, accessibly, and in good time, every time. Everyone should also have a meaningful choice of options that meet their needs, protect the climate, and promote individual and collective wellbeing.

At the moment, our inequitable, car-dominated transport system constrains mobility and limits opportunity for thousands of people and is the second-largest source of domestic carbon emissions. It also kills or injures thousands of people each year, undermines public health, creates harmful air and noise pollution, and is detrimental to our collective mental wellbeing.

To transition from what we have now to a transport system in which everyone – regardless of income, ethnicity, disability, or gender – can get where they need to go in ways that protect the climate and promote wellbeing, will require future transport policy and decision-making to focus on two things:

- 1. Making the transport system work better for those who are currently disadvantaged; and
- 2. Reducing our collective dependence on cars as our main form of transport.

In Part 1, we address the first of these: a more equitable transport system.

There are thousands of people in Aotearoa New Zealand who live with significant constraints on their mobility. As 'Hana's story' on page 12 illustrates, these barriers can take many forms. Often many are present at once, and they frequently intersect with, and exacerbate, other forms of disadvantage like low-income, inadequate housing, or lack of digital access.

In this Part, we outline some common barriers to mobility in the current transport system, show which groups and individuals are most likely to be affected, and highlight how they contribute to other forms of disadvantage. We make the case that improving equity should be a key objective of transport policy and highlight how everyone stands to benefit from a more equitable transport system. We conclude with the observation that achieving equitable transport outcomes will require changing the inputs used to make transport decisions.

This Part includes a Q&A from Erin Gough, a human rights expert and disability advocate whose experiences highlight how the transport system can restrict disabled people's mobility and rights.

A note on sources: Under the headings, 'Common barriers to mobility', and 'Whose mobility is constrained', we draw extensively from two reports summarising available evidence about transport and equity in Aotearoa New Zealand. These are:

• <u>Social impact assessment of mode shift</u>, commissioned by Waka Kotahi New Zealand Transport Agency and undertaken by the University of Otago, released September 2020; and

<sup>&</sup>lt;sup>2</sup> Freedom of movement within the borders of the state is recognised in Article 13 of the Universal Declaration of Human Rights and in section 18 of the New Zealand Bill of Rights Act 1990. In addition, the UN Charter on the Rights of Persons with Disabilities sets out in Article 9 the right of disabled people to live independently and fully participate in all aspects of life, and notes that this requires States to identify and remove the barriers that prevent this in a range of settings, including roads and transportation.

• <u>Equity in Auckland's Transport System</u>, commissioned by Te Manatū Waka Ministry of Transport and undertaken by MRCagney, released November 2020.

Unless otherwise stated, the information in these sections is sourced from these reports. It would be unwieldy to footnote every instance, but we gratefully acknowledge the authors for gathering this evidence, and the commissioning agencies for making it available. Anyone wanting to learn more about transport and equity in Aotearoa New Zealand should read these reports in full.

Any mistakes in the interpretation of the evidence are ours. Sources other than these are cited fully.

#### Common barriers to mobility

#### Cost

Having insufficient income limits many people's day to day options and activities when they choose not to travel because of the cost. This can be harmful, such as when people forgo essential medical care or keep their children home from school because they don't have the money to pay for the trip.

But some trips, like commuting to work, can't be avoided. For this reason, many people end up spending a disproportionately high percentage of their income on the cost of travel, most often by owning a car, even when their budget does not reasonably allow for the costs of petrol, maintenance, registration and WOF updates. This is known as forced car ownership. Very often people will go into debt to purchase a vehicle, so high-interest loan repayments become another inequitable cost of transport.

Other transport-related costs that can be unaffordable for many people include parking fees, fines (especially for lapsed WOF or registration which may not have been paid due to the cost), public transport fares (which cost more for those who can only afford to pay trip by trip than for those who can afford to purchase multi-trip passes), taxi and ride-share fares (which are often not an option for those on low incomes), and the initial outlay and ongoing maintenance costs associated with purchasing an alternative like a bike or scooter.

#### Accessibility

In a transport context, accessibility refers to the ease with which people can get to the places they need to go to enable them to participate in society, such as workplaces, schools, and healthcare facilities. It refers to all people, although disabled people often experience the most barriers to mobility because of the many ways an ableist society restricts their participation, including in transport.

Many aspects of the transport system can restrict accessibility. For example, someone who lives in an area where there is no public transport within a convenient walking or wheeling distance is experiencing an accessibility barrier. Likewise, someone might live within a reasonable distance of a public transport service, but not be able to use it because of physical accessibility issues, like steps up to train or bus stops for wheelchairs or buggies, or insufficient seating on buses or trains for pregnant people, older people, and those with chronic health conditions. Some public transport options are only accessible to a limited number of travellers, like buses with only one or two spaces for wheelchair users, or seats that are not wide enough for large-bodied people. See the Q&A with wheelchair user and human rights expert Erin Gough on page 18 for an illustration of some of these accessibility barriers in the public transport system. Non-physical accessibility barriers include complex or confusing timetable, fare, or ticketing information (known as 'wayfinding' information). This can be challenging for both children and older people, people with low vision or hearing impairments, speakers of English as a second language, or people with intellectual impairments. Likewise, noisy, crowded, or overwhelming street or public transport environments can also be triggering or dangerous for very young or older people, people with neurodiverse conditions like autism, Attention Deficit Hyperactivity Disorder (ADHD), or sensory processing disorders, and people with some mental health conditions (like anxiety or Post-Traumatic Stress Disorder (PTSD)).

Even driving can be inaccessible – some people have health conditions or impairments that make operating a standard car difficult or impossible, older people may lose their drivers' licence, or extreme congestion or busy traffic conditions may make driving impractical or unsafe for some.

#### Safety

Road traffic kills and injures thousands of people in Aotearoa New Zealand every year. On average, one person is killed on our roads every day, and another is injured every hour, an unacceptable situation that creates huge health, social, and economic costs for society, as well as causing untold grief and stress for thousands of families.

Fears about road safety constrain some people's independence by discouraging them from driving on particular roads or in particular conditions, but more than that, safety concerns also govern many people's decisions about transport mode, discouraging them from walking and wheeling or allowing children to use these modes. This can create an unfortunate vicious cycle where some people avoid active modes because high traffic volumes make these modes unsafe, in favour of driving, which of course contributes to the perceived safety problem.

Even on footpaths, non-car hazards can discourage people from walking regularly. Many urban areas are not well-equipped for pedestrians, either with no footpaths (as in some light industrial areas), or footpaths that are poorly-lit, not wide enough, or cluttered with obstacles like parked cars, business signs, and poorly-positioned trees or plants. Furthermore, cars are prioritised on most roads, and genuinely safe, separated cycle lanes are rare. This means footpaths are often used by other 'wheelers' – skateboards, scooters and e-scooters, children on bikes, wheelchairs, and mobility scooters. These are important active modes that should be encouraged, but when crowded onto footpaths with pedestrians, they can create additional hazards that make walking dangerous or intimidating, especially for young children, older people, or those with underlying health conditions.

Hazards from accidental collisions are not the only safety barrier that can constrain people's mobility. Bullying, harassment, and violence in public spaces are real risks for some people and can constrain their transport choices. For example, having to wait for a long time for a bus or train at night can put women, LGBTQI+ people, and some ethnic minorities at increased risk of targeted violence, including sexual violence, and even when on board a service, harassment and threatening behaviour can occur.

#### Practicality

Similar to accessibility barriers, there are some features of our current car-dominated transport system that work to constrain the mobility and limit the transport options of many people. While driving or taking an alternative mode of transport might technically be possible for people in these situations, the actual lived experience of doing so may be so inconvenient, slow, or stressful that in practice, these situations are acting as barriers that constrain people's mobility. As with all the

barriers outlined in the previous sections, these factors tend to apply disproportionately to groups or individuals who may already be experiencing multiple forms of disadvantage.

For example, current public transport routes and services have generally been designed to service a particular type of traveller: weekday commuters travelling from outer suburbs into urban centres during morning and evening 'peak' times. People who work part-time and want to commute by public transport can find themselves faced with long waits for infrequent services outside of peak hours and opt for the immediate convenience of driving instead. Similarly, those who work in multiple locations, such as home carers, resource teachers, or tradespeople are unlikely to be able to access frequent public transport services that can connect them from one work location to the next without causing unreasonable delays and disruptions to their work hours.

People outside the paid workforce also have transport needs that are not well supported by current public or active transport infrastructure. This group includes at-home parents who may need to travel with one or more children, make multiple stops to do drop-offs and pick-ups, and bring bulky items like pushchairs and nappy bags, making public transport a logistical headache. Even the brave parent who is confident cycling with children may find that existing cycle lanes and shared paths are impractical, not being wide enough to accommodate a trailer or older child riding alongside, or with gates or barriers designed to keep motorised vehicles off shared walking and cycle paths actually preventing larger cargo and passenger bikes from using these facilities.

One practicality barrier that impacts almost every type of traveller is the excessive delays and long journey times created by high traffic volumes. Most city-dwellers, especially those in Tāmaki-Makaurau Auckland, will have stories of long car or bus trips spent stuck in traffic, being made late for work or school or missing important appointments, and arriving at their destination stressed and anxious. Many will also describe actively choosing not to travel at certain times of day, or forgoing work opportunities or social events because they determined that the inconvenience and stress of navigating highly congested roads to get there was not worth the benefit.

## "I can never just expect to be able to get where I need to go": Q&A with Erin Gough

Erin Gough is a senior advisor and child rights lead at the Office of the Children's Commissioner. Born in South Africa, Erin spent her high school and university years in Ōtautahi Christchurch before moving to Te Whanganui-a-Tara Wellington in 2015. Erin has worked in legal, advocacy, and policy roles in the community and public sectors. Disabled since birth, Erin is a strong advocate for the rights of disabled people.

*Erin, you're a wheelchair user who commutes daily into the CBD. Can you talk us through a typical day from a transport perspective? How accessible is your commute?* 

When everything goes to plan, it's fairly accessible! But this relies on several factors, like:

**The local mechanic not having cars they're working on parked over the footpath**. If this happens, I have to yell out for them to move the cars and by the time I've done that, I've often missed my bus.

**There being no prams or wheelchair users on the bus already.** Even though there are theoretically two spaces, there is usually not enough room for me to get past into the other one, because I have a bulky power chair. One of my flatmates also uses a power chair, which means we usually take separate buses if we go out together (yes really). On older buses, I sometimes have to reverse down the aisle and off the ramp because there is no turning space. This feels stressful and unsafe!

An accessible bus stop. Due to Wellington's geography, there are quite a few stops that I can't get to – up or down steps, on steep hills, and so on – so I sometimes use the stop before or after the one I actually need and take a longer route.

**The bus actually stopping.** This hasn't been a problem in the last few years, but I have had awful experiences in the past when drivers would pretend not to see me and leave me waiting because they didn't want to stop and put out the ramp.

# What about outside of your commute – how easy is it for you to access transport for activities in your down time?

Fairly difficult! Especially if I want to go somewhere that doesn't have a direct bus route, or go with my wheelchair-using flatmate. There is a huge shortage of accessible taxis, especially in Wellington. None tend to operate past about 6pm unless I book days in advance, and even then, there's no guarantee. This is hugely limiting and has been the cause of many missed events when figuring out the logistics was just too stressful. As you can imagine, it is not conducive to down time at all.

A few years ago, a flight I was on was so delayed that by the time it landed in Wellington, the airport bus had finished for the night. I phoned everywhere trying to find an accessible taxi, and in desperation, ended up paying \$200 for a driver from the Kāpiti Coast. There was a media story about it later and some people commented that I should have planned more carefully! I still get angry thinking about it.

# Based on your observations, roughly how much time and mental load do you spend planning your mobility compared to what a non-disabled person might?

As you can see from my responses, I can never just expect to be able to get where I need to go, like non-disabled people can. I spend at least some time planning every trip. If it's just my regular commute, I will build in time in case any of the things I listed in the first question happen, but it is generally quite automatic. If I'm going somewhere less familiar though, I spend significant time researching the route, the topography, the types of buses, and how often they come. Going out as a flat requires even more planning, since we usually need to take separate buses. If we're lucky, one of us will only be left waiting for the others for a few minutes; if not, it could be fifteen or twenty.

There's no longer a direct bus to the airport, so if I'm flying, I plan weeks in advance, usually choosing my flights based on when I'm most likely to get a taxi. In April, I went to Queenstown with two friends, one of whom also uses a wheelchair. I contacted a local company and was told there was only one accessible taxi and it could only take one wheelchair. In the end, we hired an accessible taxi from Christchurch. We paid for someone to drive it to Queenstown, and then my friend drove it for the week. It was pricey, but worth it for the freedom. This is a classic example of a crip tax.<sup>3</sup>

# You're also a human rights expert – how well do you think Aotearoa New Zealand's transport system upholds the rights of disabled people to live independently and participate fully in all aspects of life?

Not well. Not having accessible transport has huge impacts on where people can live and what kind of life they can lead. These issues are exacerbated in rural areas and small towns, where many people have no accessible public transport options at all. There is also a complete lack of accessible transport options *between* cities and towns; none of the InterCity buses are wheelchair accessible. And of course, accessibility is not only about wheelchair access, but also things like visual and audio announcements and timetable information in accessible formats like Easy Read.

The UN Convention on the Rights of Persons with Disabilities says States should ensure disabled people have equal access to transportation. New Zealand is clearly falling well short of this obligation, despite ratifying the Convention in 2008.

The Human Rights Commission held an inquiry into accessible transport in 2005 which found disabled people faced acute, ongoing difficulties. While there have been small improvements, most of the recommendations from its report still apply sixteen years on, which is depressing.<sup>4</sup>

# *In this report we advocate for policies to reduce New Zealanders' collective dependence on cars. Can you see any potential fishhooks for disabled people in these kinds of policies?*

Yes. While these sorts of policies are clearly important, often they forget to take disabled people into account and end up further isolating an already marginalised group.

For some disabled people, a car is very much a mobility aid, and should be treated as such. I think the solution is to encourage non-disabled people for whom cars are a 'nice-to-have' to use them less by providing solid public and active transport infrastructure, rather than making disabled people 'prove' they need a car. I'd like to see lots of practical, accessible alternatives to driving, so that we can assume without judgement that anyone using a car has a good reason.

For more from Erin, <u>follow her on Twitter</u> or read her personal essay "Repairing 'an invisible coat of shame'" on the <u>RNZ website</u>.

<sup>&</sup>lt;sup>3</sup> Many disabled people have reclaimed 'crip' as an empowering self-identifier (from the outdated and ableist term 'crippled'). Erin's use of 'crip tax' here refers to the hidden costs of disability. For a useful explainer, see "The 'Crip Tax': Everything Has a Cost, but for People with Disabilities That's Quite Literally the Case," John Loeppky, CBC, April 15, 2021, https://www.cbc.ca/news/canada/saskatchewan/crip-tax-opinion-1.5856848. <sup>4</sup> Inquiry into Accessible Public Land Transport in 2005, Human Rights Commission, https://www.hrc.co.nz/our-work/people-disabilities/past-projects/accessible-journey/.

## Whose mobility is constrained?

Everyone will experience some barriers to mobility at different times and may decide to temporarily vary or alter their travel decisions accordingly. In 2019, 10 percent of adults reported being unable to make a beneficial transport journey in the past week, due to cost, time, lack of transport and/or too much traffic. This gives an indicative snapshot of how people's mobility is constrained at any given time.

The odd deferred journey due to temporary, external conditions is no big deal, but some people and groups are much more likely to experience multiple, ongoing, and compounding mobility barriers that restrict their mobility in a more permanent way. The result is an inequitable transport system that disproportionately restricts the mobility (and thus reduces the employment, education, social, and cultural opportunities) of already disadvantaged people.

Those most likely to experience ongoing transport disadvantage and poverty include: Māori; disabled people; people on low incomes or who live in low-income areas; women; takatāpui, queer and LGBTQI+ people; new migrants and ethnic minorities; and Pacific people. Often people will belong to more than one of these groups and may experience overlapping and compounding transport inequity as a result.

#### Māori

Globally, indigenous populations contribute little to carbon emissions, and tend not to have benefited equitably from the mobility that has caused these emissions. Despite this, they are often most likely to experience transport-related disadvantage and poverty, and may be especially vulnerable to the negative impacts of climate change. This arises from a combination of the intergenerational impacts of colonisation, and contemporary policies and practices that fail to adequately consider, uphold, or address the needs of indigenous people.



In Aotearoa New Zealand, Te Tiriti o Waitangi creates obligations on the Crown to recognise and uphold the rights of Māori as tangata whenua and ensure that public policy and services (including the transport system) deliver equity for Māori. This is not being achieved at present. While there are gaps in data and research specifically about Māori and transport, the available evidence points to a situation in which Māori experience disproportionate disadvantage and harm in the transport system compared to non-Māori.

Māori are much more likely than non-Māori to live in low-income households, meaning they are more likely to experience transport poverty and cost-related barriers to mobility. Māori are more likely than non-Māori to go without seeing a doctor due to a lack of transport. This not only creates a transport disparity but contributes to the well-documented health disparities and lower life expectancy that Māori also experience on average.

There are also pathways from transport disadvantage to the criminal justice system that disproportionately affect Māori. Research suggests that, due to cost, Māori (particularly Māori men) may be more likely than non-Māori to drive without a licence or drive unregistered or unwarranted vehicles. Sometimes this is done to meet their own urgent transport needs, and often to support the needs of whānau.<sup>5</sup> Unfortunately, Māori are also more likely to be stopped by Police than non-Māori and thus more likely to be issued with fines for relatively minor traffic infringements which, if they go unpaid, can eventually result in imprisonment. According to the Howard League for Prison Reform, 65 percent of Māori offenders have a driving offence as part of their initial prison sentence, and about 5 percent of all sentences are just for driving without a licence.<sup>6</sup> On top of that, around 80 percent of employers require a current drivers' licence as a condition of employment, so Māori finishing prison sentences or who have lost their licence as the result of a driving offence can face an additional barrier to reintegration.

Māori also experience major inequity in road safety outcomes. Because they are more likely to experience low income, Māori are less likely than non-Māori to own a vehicle, and the vehicles they do own are more likely to be old and unsafe compared to more modern vehicles. Māori of all ages face higher risk of road trauma than all other ethnicities, likely due to a combination of higher rates of travel in less safe vehicles, lower levels of driver education, and higher exposure as a pedestrian because of lack of access to cars.

Finally, Māori have higher rates of disability than any other ethnic group, which as we will see in the next section also disproportionately predisposes them to transport poverty and transport-related social disadvantage. The net effect is that many Māori experience multiple, intersecting risk factors that restrict their mobility and contribute to other forms of disadvantage.

### Disabled people

In her contribution to our April 2021 report about pandemic loneliness *Still Alone Together*, Disabled Persons' Assembly NZ Chief Executive Prudence Walker explained the 'social model' of disability:

"As disabled people, we are not disabled by our bodies but by society and the constructs (physical, social, attitudinal, informational) within it. [The social model of disability] places the responsibility on society to create a non-disabling world and not [on] individuals who live with impairments."<sup>7</sup>

The transport system is unfortunately a major source of exclusion for disabled people, and this can take many forms. Some disabled people have impairments that mean driving is their only transport

<sup>&</sup>lt;sup>5</sup> K. Raerino, Alex K. Macmillan, and Rhys G. Jones, "Indigenous Māori Perspectives on Urban Transport Patterns Linked to Health and Wellbeing," *Health & Place* 23 (September 1, 2013): 54–62, https://doi.org/10.1016/j.healthplace.2013.04.007.

<sup>&</sup>lt;sup>6</sup> "Driving Programme," The Howard League for Penal Reform New Zealand, n.d.,

https://www.nzhowardleague.org.nz/driving/.

<sup>&</sup>lt;sup>7</sup> Holly Walker, "Still Alone Together: How Loneliness Changed in Aotearoa New Zealand in 2020 and What It Means for Public Policy," Post-Pandemic Futures Series (Auckland: The Helen Clark Foundation and WSP, April 2021), https://helenclark.foundation/still-alone-together-report.

option. Because disabled people are much more likely than non-disabled people to live on low incomes, this places many in a situation of forced car ownership and transport poverty. For others, their only option may be to be driven by others. While subsidies are available through the Total Mobility scheme to reduce the cost of taxis and public transport for people in this situation, even a half-price taxi can be out of reach for someone on a very low income, and many people report availability issues when trying to book a taxi through this scheme.

Another group of disabled people are those who do not drive, either because their impairments prevent it, or because the costs of car ownership are too high. These people are heavily reliant on public transport. Yet as illustrated by Erin Gough on page 18 public transport is often inaccessible to disabled people, including: physically inaccessible bus stops or train stations; public transport vehicles with limited seating for wheelchair users or inadequate seating for those with invisible, chronic, or underlying impairments; timetable, fare, and ticketing information and systems that are hard to read or overly complicated for those with hearing impairments, low vision, or intellectual impairments; and crowded, noisy, or overwhelming transport environments that are triggering or overstimulating for those with neurodiverse conditions. These factors likely prevent many disabled people from travelling as often as they would like to, and contribute to the compounding systemic barriers that keep many disabled people underemployed, socially isolated, and excluded them from society. This is known as transport-related social disadvantage.

Active transport is another area in which many disabled people are effectively excluded. Some disabled people can use the limited active transport infrastructure we currently have, but others could make greater use of active transport modes if footpaths, cycle lanes, and shared paths were designed with disabled people in mind. This could include wider cycle lanes for those with modified bikes, less cluttered footpaths with fewer hazards for those with low vision, safe spaces for wheelchairs or mobility scooters (either wider footpaths or genuinely shared lanes that make adequate provision for mobility aids as well as bikes), and better aural cues and soundscaping to help people with hearing impairments to navigate urban spaces.

One major gap in our knowledge about disabled people's transport needs (and other forms of transport inequity) is that we do not collect good data about the trips that people forgo because of a lack of transport options. While we know from qualitative studies and statistics about disabled people's general wellbeing that this is an important issue, there is not enough sound data about unmet transport need to enable transport planners to model the likely effects of a more accessible public transport system on disabled people's mobility or increased total patronage.

#### People on low incomes (or who live in low-income areas)

Low income is a leading cause of transport inequity, disadvantage, and poverty. People living on very low incomes are more likely than others to forgo necessary trips because of cost, whether this is the cost of fuel or public transport. They are less likely to have access to a vehicle, and (on the flipside of the same coin) are also more likely to experience forced car ownership because of a lack of realistic alternatives.

As an example, on any given day, driving may be the only available option for someone on a very low income, because it does not incur immediate cost. While the actual cumulative costs of fuel and car maintenance may make driving more expensive on a per-trip basis than a bus or train ride to the same destination, those costs are hidden and deferred. Public transport requires on the spot payment (whether in cash or with a topped-up card), and for many people on low incomes, this is a challenge. In fact, people on low incomes often pay *more* than people with higher incomes to use

public transport, because they are more likely to purchase single fares than buy discounted multitrip tickets, monthly passes, or make large top-ups on an electronic ticketing card. In this way, multitrip fare subsidies can make it harder for people with low income to get around, require them to spend more on travel than others (in both real and proportional terms) and, perversely, reward those who can reasonably afford to pay more upfront with the cheapest travel.

There is significant disparity in the proportion of income that low-income households spend on transport compared to high income households. In 2019, households in the lowest income quintile spent 28 percent of their household budget on transport, while those in the highest quintile spent just 8 percent.<sup>8</sup>



Household spending on transport by income quintile

While it had been the case since at least 2010 that low-income households spent a greater proportion of their income on transport than high-income households (by a margin of roughly 6 percent), the gap has widened rapidly since 2016, with the transport spend of high-income households falling slightly, while that of low-income households steeply increased. It is not clear exactly what precipitated this dramatic change in 2016. Petrol prices experienced a reasonably sharp rise around that time, as did housing unaffordability. More low-income households may have moved out of urban centres in search of affordable housing, creating longer travel distances. More research is needed to understand exactly what caused and continues to drive this widening inequity in transport spending.

As well as spending a greater percentage of their income on transport and sometimes paying more per trip than those with greater financial resources, people whose mobility is constrained by cost are also likely to pay more for basic consumer items. They are more likely to purchase food and groceries from local dairies and convenience stores that charge high mark-ups, and may also purchase household items like clothes, small appliances, and gifts from mobile shopping vans offer low or no-deposit upfront but charge extremely high compound interest. Such purchases can fuel a further cycle of financial stress for many families.

There are also disadvantages to living in a low-income area (which is mostly, but not entirely correlated with having a low income). Across Tāmaki Makaurau Auckland, only a little over 40

<sup>&</sup>lt;sup>8</sup> Inclusive Access: Household Spending on Transport, Transport Indicators (Ministry of Transport), https://www.transport.govt.nz/statistics-and-insights/transport-indicators/.

percent of people live within walking distance of public transport; this tends to be worse for people in low-income areas. A 2019 study measured public transport connectivity in Auckland based on the extent of train and bus services, stops, and stations, and concluded that, on average, people in lowincome areas had poorer connectivity and were more likely to live further from their destinations, face longer journey times, and need to transfer between services to reach their destinations.<sup>9</sup> Current farebox recovery requirements incentivise public transport operators to focus on profitable high-patronage routes over meeting the unmet transport needs of disadvantaged communities.

By contrast, people with high incomes are more likely to benefit from public transport, because they are more likely to live within walking distance of a stop, be able to reach their destination with a single trip, and be served by more frequent and reliable services. They also tend to be more vocal in requests for improvements, more likely to participate in consultation, and more likely to vote in local and national elections. As a result, they may be the first to benefit from network improvements or new services, even if the unmet need is higher in low-income areas.

<sup>&</sup>lt;sup>9</sup> Saeid Nazari Adli, Subeh Chowdhury, and Yoram Shiftan, "Justice in Public Transport Systems: A Comparative Study of Auckland, Brisbane, Perth and Vancouver," *Cities* 90 (July 1, 2019): 88–99, https://doi.org/10.1016/j.cities.2019.01.031.
#### Low-carbon, shared community transport solutions

'Community transport' refers to volunteer-based transport services that are specifically designed to meet the needs of a particular group. There are a huge range of activities captured under the umbrella of community transport. Examples include:

- Schools with teen parent units that provide a shuttle service to bring mothers and their babies to school (and its onsite crèche) in the morning and home in the afternoon.
- Door-to-door services to connect older people with important local destinations like supermarkets, doctors' surgeries, and libraries;
- Formal and informal shared mobility within whānau, hapū, and iwi to support to access important locations like marae, attend events like tangi or wānganga, or transport tamariki to and from kōhanga reo or kura.
- Workplaces that provide all-hours transport for shift workers.

Expanding the range and reach of community transport schemes like these has significant potential to improve equity and respond to unmet transport need in diverse communities, yet they are largely absent from transport policy discussions. Indeed, those who operate these services probably don't often think of themselves as providing a transport service either.

Community transport solutions need to be part of the decarbonisation strategy for urban transport. At scale, operating frequently and achieving wide coverage, they have the potential to significantly reduce the need for individual car ownership within a diverse range of communities.

Ramping up the provision of low-carbon, shared community transport to the extent that it could start to influence VKT will require much greater collaboration than currently exists between communities, transport agencies, and local and central government. We need to know where community vans and shared vehicles already exist, how they are used, and what kind of support they need, and then start to provide that support. This could include direct funding, but also things like streamlined procurement of vehicles, assistance with the costs of insurance and maintenance, and recruitment and support for volunteer drivers.

#### Women

At a broad level, men and women have different travel patterns. In general, men tend to travel more, take more and longer work trips, and travel more at peak times. By contrast, women travel more at off-peak times, use cheaper transport modes, take more trips with multiple destinations strung together (known as 'trip-chaining'), and are less likely to have access to a car. Women are also more likely than men to take frequent trips over short distances for social or recreational purposes.

This is important, because by and large, our transport system – from its embedded assumption that cars will be the primary mode, to public transport designed to move large numbers into urban centres at peak times, to narrow cycle lanes designed for medium distance commuter cyclists – has been designed with men's travel patterns in mind.

This creates gender disparity in the experience of transport disadvantage and barriers to mobility. Internationally, women are more likely to experience transport-related social disadvantage from missing out on opportunities to participate in society due to a lack of transport options (this may be especially true of sole parents, who are predominantly women, because of both the cost and complexity of trip patterns with children). They are also much more likely to experience the threat of harassment or violence in public spaces, to report feeling unsafe using or waiting for public transport or in taxis or ride shares, less likely to travel alone, and more likely to report stress or anxiety from the logistics and planning involved accessing important destinations while managing these risks.

These international trends are reflected in Aotearoa New Zealand, where women travel less distance overall by car than men, and are more likely to be passengers than drivers. They travel greater distances by public transport than men, despite the fact that public transport services tend not to be well-matched to their transport needs. They walk greater distances than men, but are much less likely to cycle.

A recent study of attitudes to cycling for Māori and non-Māori women in one city found that safety was a major barrier, with participants identifying "a triple burden" of perceived traffic danger, personal safety as women, and the need to be safety-conscious because of their responsibilities for others making them less likely to cycle.<sup>10</sup> Gendered differences in active transport start young, with girls less likely than boys to be allowed to travel independently to school, and considerably less likely to cycle, often citing reasons of school uniform.

Women are more likely than men to forgo a doctor's visit for transport reasons, with young Māori and Pacific women most likely to be affected.



While most gender-related transport disadvantage is experienced by women and minority genders, there are also negative implications for men, namely in road deaths and injuries. Men are more likely than women to be killed or injured on the roads and have a higher hospitalisation rate for traffic injuries across all transport modes.

## Takatāpui, queer, and LGBTQI+ people

There is a lack of detailed and specific research about the transport experiences of the queer community both here and overseas, but there is emerging evidence to suggest that they also face considerable transport-related inequity, disadvantage, and poverty.

Like women, takatāpui and queer people may face heightened risks of bullying, harassment, threatening behaviour, and physical or sexual assault in public spaces, including while using or waiting for public transport. In the 'Counting Ourselves' survey of more than 1000 transgender and nonbinary people in Aotearoa New Zealand in 2019, 18 percent reported avoiding public transport or taxis due to fear of being mistreated. Such fears are well-founded: reflecting on their experiences of using public transport or taxis, 9 percent of respondents reported being treated unfairly, 15

<sup>&</sup>lt;sup>10</sup> Marie Russell et al., "Pedalling towards Equity: Exploring Women's Cycling in a New Zealand City," *Journal of Transport Geography* 91 (February 1, 2021): 102987, https://doi.org/10.1016/j.jtrangeo.2021.102987.

percent reported being verbally harassed, and 2 percent reported having been physically attacked.<sup>11</sup> Fixing this problem is not simply a matter of reducing the incidence of harassment or violence in public spaces; as Kiri Crossland points out in a paper on queer urban planning, truly public spaces must also be actively welcoming to people who are not straight men.<sup>12</sup>

Because of the discrimination they can face in wider society, transgender and nonbinary people are more likely be unemployed and/or live on very low incomes. In a US study, transgender and gender non-conforming participants reported low incomes and either a lack of employment opportunities, or precarious casual employment that did not conform to peak commuter times. The low-income areas where they could afford to live tended not to be well-served by public transport (an international phenomenon that is replicated here, especially in Tāmaki Makaurau Auckland), and they reported infrequent services and long wait times which heightened their vulnerability to harassment and abuse. In Aotearoa New Zealand too, respondents to the 'Counting Ourselves' survey of transgender and nonbinary people reported an income approximately half that of an average New Zealander. This means transgender and nonbinary people (and others from the LGBTQI+ community) are more likely to experience transport poverty and disadvantage. In the 'Counting Ourselves' survey, 77 percent said they had done without, or cut back on trips to the shops or other local places.<sup>13</sup>

#### Pacific people and other ethnic minorities

Globally, ethnic minority groups are more likely to experience transport inequity due to a combination of lower-than-average income, being more likely to live in outer suburbs that are not well-served by public transport, and having greater exposure to safety risks like harassment, air pollution, and traffic accidents (especially as pedestrians since they are less likely to own a car).

Pacific people in Aotearoa New Zealand experience many of these things, but with particular characteristics that are worth noting. Like Māori, Pacific people are much more likely than other ethnicities to go without visiting a doctor for transport reasons, and this contributes to wider well-documented health disparities. Recent analysis of transport patterns and contributions to climate emissions between different ethnic groups is revealing important findings about Pacific people's mobility. Pacific people travel the shortest distances of any ethnicity across all transport modes, own the fewest cars, and contribute the least of any ethnic group to carbon emissions, by approximately one-third.<sup>14</sup> This means it will be particularly important to ensure our efforts to decarbonise the transport system do not negatively impact Pacific people.

Specific research about transport inequity for ethnic minorities in Aotearoa New Zealand more generally is patchy, but it supports the conclusion that they are more likely to experience low income and the transport disadvantage and poverty that comes along with this. Asian women are amongst those more likely to report missing a GP visit for transport reasons, for example. It is likely that difficulties with accessing timetable and ticketing information or communicating with drivers in

https://researchcommons.waikato.ac.nz/handle/10289/12942.

<sup>&</sup>lt;sup>11</sup> Jaimie Veale et al., "Counting Ourselves: The Health and Wellbeing of Trans and Non-Binary People in Aotearoa New Zealand," Report (Transgender Health Research Lab, 2019),

 <sup>&</sup>lt;sup>12</sup> Kiri Crossland, Sex(Uality) in the City: Planning for Queerer Public Space, MRCagney, August 19, 2021, https://www.mrcagney.com/about/blog/sexuality-in-the-city-planning-for-queerer-public-space/.
 <sup>13</sup> Veale et al., "Counting Ourselves."

<sup>&</sup>lt;sup>14</sup> Caroline Shaw and Jemaima Tiatia-Seath: Travel Inequities Experienced by Pacific Peoples in Aotearoa/New Zealand (unpublished research, paper under review), 2021.

English as a second language is a barrier to mobility for some people from ethnic minorities, particularly new migrants.

A 2016 issues paper noted that in Tāmaki Makaurau Auckland, a high proportion of young people from ethnic minority and migrant backgrounds are enrolled in tertiary education in the central city and elsewhere.<sup>15</sup> Their transport needs are primarily to access education and part-time jobs, but there has been little research undertaken into how well Auckland's transport system enables them to do this.

We don't have good data about how trip patterns vary between ethnic groups, nor how well members of ethnic minorities feel they are served by the current transport system. It is likely that there is considerable unmet need amongst these groups, and considerable variability between them, but with current data currently it is not possible to get a clear picture of the extent of unmet transport need amongst ethnic minority and new migrant communities.

<sup>&</sup>lt;sup>15</sup> Paul Spoonley et al., "Transport Demand Implications of Changing Population Age and Ethnic Diversity in Auckland: A Thought Piece," Auckland Knowledge Exchange Hub (Massey University, May 2016).

## Why a fairer transport system is better for everyone

As we have illustrated, there are major issues of equity and fairness in Aotearoa New Zealand's current transport system. There are many reasons to pursue **transport equity** (when the benefits and costs of transport policies and projects are fairly distributed), **transport justice** (when decision-making processes are fair, representative, and ensure the transport system meets the basic needs of everyone), and **mobility justice** (when unjust power relations and uneven mobility are fully addressed). Achieving an equitable transport system will benefit everyone.

## Basic fairness and human rights

Few would contest the statement that everybody should be able to get where they need to go affordably, accessibly, and in good time. Being able to do so is a necessary precondition to accessing employment, education, social, and cultural opportunities. Yet as long as transport planners and decision-makers keep resourcing a transport system that restricts mobility for some while enabling it for others, we will never enjoy equality of opportunity in Aotearoa New Zealand.

This affects us all. At different times in our lives, we all experience some barriers to mobility. Often, this happens suddenly via a change of circumstances such as the birth of a child, the onset of an illness or impairment, loss of employment, or the ageing process. Such rapid loss of mobility can leave us isolated and vulnerable and can hinder recovery by making it harder to find work, see friends and family, or access recreation. In an equitable transport system, a change in circumstances would not necessarily entail a loss of mobility. As noted by Erin Gough on page 19, the fact that Aotearoa New Zealand does not currently provide equal access to the transport system puts us in breach of our international human rights obligations.

## Te Tiriti o Waitangi

It also puts the Crown in breach of its Te Tiriti o Waitangi obligations. The fact that Māori are more likely to have low incomes, experience disability, have chronic health conditions, be killed or injured on the road, find themselves on a path to the criminal justice system via minor traffic offences, and experience transport disadvantage and poverty are the legacy of discriminatory colonial policies over many decades.

When it was signed in 1840, Te Tiriti promised Māori tino rangatiratanga and equal citizenship, but it was consistently breached by the Crown in the way the country was settled and governed. Today, it creates obligations on the Crown to ensure public services (including the transport system) recognise Māori as tangata whenua, partner with hapū and iwi to deliver equitable outcomes for Māori, and share power and resources to enable 'by Māori for Māori' solutions and the exercise of tino rangatiratanga.

In transport, this could look like mandating Māori representation on transport decision-making bodies, handing authority to iwi and hapū to manage aspects of the transport system in their rohe, partnering with Māori to develop specific plans to improve transport outcomes for Māori, and supporting hapū, iwi, and kaupapa Māori organisations with the resources they need to play a larger part in transport decision-making and governance.

## Opportunity cost

At present, there is a considerable opportunity cost from all the restricted mobility our inequitable transport system produces. It is difficult to quantify, because we don't have good data about the full extent of forgone trips, unmet transport need, or repressed demand, but it is reasonable to assume that if the transport system prioritised equity, there would be widespread benefits, not only for those directly affected, but for our economy and society as a whole. These benefits could include:

- More people accessing primary healthcare, reducing the demand for (and costs of) urgent care and hospitalisations when untreated conditions become critical.
- Fewer people injured or killed on the roads (especially the disproportionate trauma experienced by Māori), producing cost savings for the ACC and health systems and preventing grief, stress, and lost income for many families.
- More disabled people in employment, improving their income, skills, and quality of life, and producing productivity gains for the wider economy.
- Low-income households spending a smaller percentage of their income on transport, freeing up more income for the other things they need, and boosting their consumer power and economic impact.
- Greater use of active transport modes like walking, wheeling, and cycling (especially among Māori, Pacific people, and women) producing public health benefits from increased activity levels and reducing the unfair burden of ill-health.
- Safe, inclusive, violence-free public spaces that create the conditions for social connection and genuinely reflect the diversity of urban populations.

## Learning the equity lessons from COVID-19

All over the world the COVID-19 pandemic has highlighted the consequences of allowing gross economic, social, and health disparities to emerge and continue between different groups in society. We have seen the impact of this in the inequitable burden of serious infections and deaths in disadvantaged populations, the greater economic impact sustained by people in precarious or low-paid jobs, and in uneven vaccination rates between different ethnic groups and geographic areas.

We should apply the lessons from these experiences and take the opportunity to address and improve widespread inequity and disadvantage with the policies, projects, and investments we pursue as part of the pandemic recovery effort. Investing heavily in more equitable transport will be an important way to do this.

As we have outlined, the solutions that will produce a more equitable transport system – such as more reliable and affordable public transport, fully accessible urban environments, safer streets for walking, cycling, and wheeling, and reduced congestion – will benefit everyone. By making the transport system work better for those most currently disadvantaged, we can not only reduce transport inequity, but improve the overall performance of the transport system and the fairness of our economy and society for everybody.

#### Fair outcomes require a fair process

Many of the barriers to mobility and inequitable outcomes documented in Part 1 have been understood for some time – long enough that we might reasonably expect them to have been factored into transport policies and decision-making processes to ensure that major new transport

investments reduce existing inequities. Unfortunately, this has not generally been the case either here or overseas.

## The challenge of quantifying equity impacts

In many cases, proposals for new or upgraded transport projects are assessed using cost-benefit analyses (CBA), a process which involves identifying, measuring, and applying a value to potential costs and benefits of a project, and aggregating these to determine an overall score known as a Benefit-cost Ratio (BCR). This can be positive (the project will generate more benefits than costs), or negative (more costs than benefits). The BCR is then used to determine both whether the project is a sound investment, and to see how it compares to other similar or alternative projects.

Researchers over many years have pointed out that CBAs and BCRs tend not to adequately consider the social impacts of transport, or the fact that these impacts are not evenly distributed.<sup>16</sup> These social and equity impacts are sometimes left out entirely, or they may be noted but disregarded. In part, this stems from the fact that the CBA method relies on being able to attach a monetary value to the costs and benefits of a project. This might be possible when it comes to factors like construction cost, current demand, journey times, job creation, and potential revenue, but is much harder for factors like failure to unlock existing unmet mobility needs, perpetuating gendered patterns of transport, or continuing to suppress active modes with high traffic volumes. When equity factors *are* included in CBA and BCR appraisal methods, they can tend to focus on the potential distribution of the quantifiable, monetised impacts across income brackets but exclude other dimensions of equity like gender, ethnicity, and disability.<sup>17</sup> Researchers and policy-makers in Aotearoa New Zealand and elsewhere are beginning to expand the range of tools available to assess the equity implications of transport decisions, but this is yet to be widely reflected in the outcomes produced by the transport system, and more conventional CBA BCR methods remain dominant.

## Embedding equity principles in high-level strategies

One way to address the challenge of quantifying equity impacts is to instead include equity principles in the strategies and plans that govern overarching transport spending, so that a clear intent to prioritise equitable outcomes is signalled to transport agencies and local authorities. This is the intent signalled in the Government Policy Statement on Land Transport 2021-2031 (GPS 2021)<sup>18</sup> and the National Land Transport Programme 2021-24 (NLTP).<sup>19</sup>

The GPS 2021 states that the purpose of Aotearoa New Zealand's transport system is to "improve people's wellbeing, and the liveability of places" by delivering against four strategic priorities for the transport system in the next ten years: safety, better travel options, improving freight connections, and climate change. The NLTP is a three-year programme of prioritised activities and is intended to

<sup>&</sup>lt;sup>16</sup> Karel Martens, "Substance Precedes Methodology: On Cost–Benefit Analysis and Equity," *Transportation* 38, no. 6 (September 17, 2011): 959, https://doi.org/10.1007/s11116-011-9372-7.

<sup>&</sup>lt;sup>17</sup> A. Curl et al., *Social Impact Assessment of Mode Shift*, p 43, (NZ Transport Agency Research Report, University of Otago, September 2020), https://www.nzta.govt.nz/resources/research/reports/666.

<sup>&</sup>lt;sup>18</sup> Government Policy Statement on Land Transport 2021-2031 (Wellington: Ministry of Transport, September 2020), https://www.transport.govt.nz/area-of-interest/strategy-and-direction/government-policy-statement-on-land-transport-2021/.

<sup>&</sup>lt;sup>19</sup> Ngā Kaupapa Huarahi o Aotearoa National Land Transport Programme 2021-2024 (Wellington: Ministry of Transport and Waka Kotahi, August 2021), https://www.nzta.govt.nz/planning-and-investment/national-land-transport-programme/2021-24-nltp/.

give effect to the GPS 2021 by determining exactly where transport expenditure will be invested, using the policy intent signalled in the GPS as a guide.

Although both documents have a reasonably strong focus on wellbeing and equity in their high-level objectives, by the time they get to detailed policies, priorities, and projects, they are vague about specifically how these will advance equity in the transport system. In this way, there is a risk that these national instruments will replicate international findings that even when strategies and plans mention equity, they have underdeveloped objectives and tools for addressing it. In such circumstances, it is easy to see how decision-makers fall back on conventional evaluation tools like BCRs, perhaps noting that equity impacts of a policy or project should be monitored, but not actively using them to guide their decisions.

## 'Reprogramming' the transport system

Delivering a transport system that achieves the Government's stated purpose of "improving people's wellbeing and the liveability of places" will require effectively 'reprogramming' the decision-making policies and process that govern the transport system in Aotearoa New Zealand to embed equity at all levels. This should include:

- Developing new tools and methods to accurately evaluate the social and equity impacts of transport decisions (not simply grafting these onto existing methods).
- Gathering robust data that fills current knowledge gaps about transport and equity, especially about forgone trips, unmet need, and latent or suppressed demand for mobility that could be unlocked by more equitable policies and programmes.
- Enhancing how equity considerations influence decision-making, aiming not simply to mitigate negative impacts, but to actively improve the fairness of the transport system.
- Involving members of disadvantaged communities in transport decision-making, including by mandating Te Tiriti partnership, ensuring representation from affected communities on transport decision-making bodies, co-designing local projects with those directly affected.
- Taking a more proactive and purposeful approach to community engagement to ensure a wider range of voices and perspectives are heard.

The many inequities in the current transport system are the result of decades of transport planning with a certain set of underlying assumptions and criteria. As with many systems and processes, we get out what we put in. If we base our future transport decisions on equitable inputs, it is much more likely to deliver equitable outcomes.

# Part 2: The Shared Path – why reducing car dependence is critical, and the risks of getting it wrong

Part 1 illustrated how our inequitable, car-dominated transport system constrains mobility and limits opportunity for thousands of people. The transport system is also our second-largest source of carbon emissions. It kills or injures thousands of people each year, undermines public health, creates harmful air and noise pollution, and is detrimental to our collective mental wellbeing.

In Part 2, we focus on the second key objective that transport policy and decision-making will need to prioritise if Aotearoa New Zealand is to transition to the equitable, low-traffic cities we need in the future: reducing our collective dependence on cars as our main form of urban transport.

Nearly three quarters of Aotearoa New Zealand's population growth in the next 30 years will happen in cities. Tāmaki Makaurau Auckland alone will account for half this growth. By 2048, there will be almost one million more people living in our cities than there were in 2018.



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<sup>&</sup>lt;sup>20</sup> "He Tūāpapa Ki Te Ora | Infrastructure for a Better Future: Aotearoa New Zealand Infrastructure Strategy Consultation Document" (New Zealand Infrastructure Commission Te Waihanga, May 2021), 63, https://infracom.govt.nz/assets/Uploads/Infrastructure-Strategy-Consultation-Document-May-2021.pdf.

This growth places increasing pressure on our urban infrastructure and creates demand for new investment, including new and improved transport infrastructure. Te Waihanga, the New Zealand Infrastructure Commission, notes that the major challenges facing our cities include:

- High levels of traffic congestion.
- Poor availability of public transport and walking and cycling options.
- Urban design that leads to poor quality-of-life.<sup>21</sup>

All these challenges stem at least in part from the same problem: a transport system predicated on an assumption of car dominance. They also have a shared solution: reduced car dependency.

But we must take care with how we pursue reduced car dependency in the transport system. By and large, those most disadvantaged by the current system are also those who contribute least to transport-related emissions and are most likely to experience transport-related poverty or disadvantage. It is therefore essential that whatever policies we adopt to encourage people to drive less do not unfairly impact those who are not causing the problem.

In this Part, we first set out the climate change, road safety, and wellbeing arguments for pursuing reduced car dependency, including the commitments the Government has made both domestically and internationally that will require significant change in this area. We then detail the risks of attempting to decarbonise urban transport without adequately considering equity, before setting out what equitable, low-traffic cities could look like in Aotearoa New Zealand in future. We look at Scotland's recent National Transport Strategy 2020-2040 as a model of what it looks like to embed improved equity and reduced emissions into transport policy, and comment on the potential of street-level changes to reduce traffic volumes to play an ongoing part in our COVID-19 recovery.

This Part features two inserts from our partners at WSP, one about the potential of the 20-minute cities movement to advance equity and decarbonisation in Aotearoa New Zealand (building on their own recent report on this topic),<sup>22</sup> and one proposing four bold ideas that could rapidly decarbonise urban transport.

<sup>&</sup>lt;sup>21</sup> "He Tūāpapa Ki Te Ora | Infrastructure for a Better Future: Aotearoa New Zealand Infrastructure Strategy Consultation Document."

<sup>&</sup>lt;sup>22</sup> "20-Min City in Aotearoa" (Auckland: WSP New Zealand, 2021), https://www.wsp.com/-/media/Insights/New-Zealand/Documents/20-Min-City-in-Aotearoa.pdf.

## The case for reducing car dependency

Aotearoa has one of the highest rates of car ownership in the OECD, and we spend the vast majority (83 percent) of our travel time in cars. The cumulative distance New Zealanders travel by car each year has increased steadily since 2011 and totalled 35.5 *billion* kilometres in 2019.<sup>23</sup> That's about the same distance as travelling from the Earth to Mars and back 325 times.



The fact that most people choose driving as their primary mode of transport makes sense within our car-dominated transport system. When the alternatives to driving are inconvenient, inaccessible, unsafe, or non-existent, driving is sometimes the only practical option, and can often seem easier and more affordable than taking public transport, walking, or cycling, at least at face value. This can especially be the case for disadvantaged or marginalised groups or individuals, as set out in Part 1.

Many people require a car for their jobs, especially if they live or work in an area that is not wellserved by public transport. Not having access to a car can be a significant barrier to accessing employment and healthcare, especially for young people and Māori.<sup>24</sup> Some disabled people have impairments that make cars – whether self-driven or driven by others – their only transport option (though many other disabled people are heavily reliant on public transport). Māori driving patterns often reflect and uphold cultural values like whanaungatanga, and very often driving is the only way to access important cultural destinations like marae that are not located on public transport routes.

For those who have grown up in societies or cultures that strongly normalise car use, cars have come to represent and embody values like freedom, independence, and opportunity. We often view cars as extensions of our homes and reflections of our personalities, and it can be very hard to imagine life without them. Car manufacturers and advertisers sell us on this vision of convenient, car-based personal mobility, but in reality, it simply cannot be delivered in a growing city. Instead, we are left

 <sup>&</sup>lt;sup>23</sup> The impact of the COVID-19 pandemic in 2020 is yet to be reflected in the Ministry of Transport's statistics.
 <sup>24</sup> Greer Hawley et al., "The Normative Influence of Adults on Youth Access: Challenges and Opportunities in the Context of Shifts Away from Car-Dependence," *Journal of Transport & Health* 16 (March 1, 2020); K.
 Raerino, Alex K. Macmillan, and Rhys G. Jones, "Indigenous Māori Perspectives on Urban Transport Patterns Linked to Health and Wellbeing," *Health & Place* 23 (September 1, 2013): 54–62.

stuck in traffic, frustrated, and ready to demand more roads and parking spaces to 'fix' the problem, when in fact, this collective reliance on cars comes at huge cost.

## Climate change

The transport sector is our second-largest source of carbon emissions, and accounts for around 43 percent of domestic CO2 emissions (and 20 percent of gross domestic greenhouse gas emissions).<sup>25</sup> More than half these emissions come from private vehicles and in Tāmaki Makaurau Auckland, 40 percent of all carbon emissions come from private cars.<sup>26</sup>

Reducing private vehicle use is increasingly seen as a key plank of effective climate change policy, here and overseas. The ERP consultation document identifies "reducing reliance on cars and supporting people to walk, cycle and use public transport" as the first of three target areas for decarbonising the transport sector, and proposes a specific target to "reduce vehicle kilometres travelled (VKT) by cars and light vehicles by 20 percent by 2035 through providing better travel options, particularly in our largest cities."



While policies to reduce car dependence and VKT are far from uncontroversial with the public (quite the opposite), it is increasingly accepted by experts and decision-makers that it will simply not be possible to meet emissions reduction targets without significantly and purposefully reducing widespread car dependence in the transport system.

In Tāmaki Makaurau Auckland, even building six major new public transport projects, electrifying buses, increasing vehicle emissions standards and increasing the proportion of electric vehicles will have little impact on transport-related emissions unless there is a major reduction in the number of

<sup>25</sup> Te Hau Mārohi Ki Anamata - Transitioning to a Low-Emissions and Climate-Resilient Future: Emissions Reduction Plan Consultation Document (Wellington: Ministry for the Environment, October 2021), https://environment.govt.nz/assets/publications/Emissions-reduction-plan-discussion-document.pdf.
<sup>26</sup> Decarbonising for a Prosperous New Zealand, <u>https://www.beca.com/ignite-your-thinking/ignite-your-thinking/may-2020/decarbonising-for-a-prosperous-new-zealand</u> cars on the road.<sup>27</sup> As the ERP consultation document notes, "the scale of change to achieve these reductions and complete decarbonisation cannot be overstated."

Crucially, electric vehicles are included in the need to reduce car dependence and VKT. Auckland University researchers have pointed out that relying primarily on electric vehicles to decarbonise transport will not reduce emissions quickly enough to meet our 2050 targets and leaves disadvantaged populations increasingly vulnerable to the risks of climate change. Simply replacing petrol and diesel cars with electric ones will do nothing to address car dependency and forced car ownership and risks effectively locking these causes of transport poverty and inequity into the future transport system.<sup>28</sup>

Relying on electric cars to reduce our net emissions is also globally irresponsible. Making cars (regardless of how they are powered) contributes significantly to emissions in the country of manufacture and fuels unsustainable demand for component minerals in others. If we import large numbers of electric vehicles, we will make our displaced emissions someone else's problem, and contribute to exploitative mining and human rights abuses in countries with few regulatory protections. Reducing traffic volumes, on the other hand, would be good for both domestic and international inequity, because it has the potential to reduce our reliance on imported embedded carbon at the same time as creating major environmental, health, safety, and equity benefits here.

People with greater resources tend to drive more and produce higher emissions than those on low incomes or from transport-disadvantaged communities, meaning efforts to reduce VKT should be targeted initially at those who contribute most to the problem. If this produced a 10 percent reduction in VKT from private cars each year, every year, we could see a 62 percent reduction in emissions from driving by 2040, and traffic volumes comparable with those during a COVID-19 Alert Level 4 lockdown – without the attendant loss of mobility.<sup>29</sup>

#### Road safety

Road traffic also kills and injures thousands of people every year. On average, one person is killed on our roads every day, and another is injured every hour. The estimated social cost of these deaths and injuries is almost \$5 billion each year.<sup>30</sup> All of these road deaths and injuries were preventable. This fact is acknowledged in *Road to Zero*, Aotearoa New Zealand's road safety strategy for 2020-2030, which sets the ambitious and ethical target that by 2040, no-one should die on New Zealand's roads, with an interim goal of halving the number of fatalities on the roads in 10 years.<sup>31</sup> *Road to Zero* is New Zealand's contribution to 'Vision Zero', a revolutionary global road safety movement founded on the principle that "it can never be ethically acceptable that people are killed or seriously

https://interactives.stuff.co.nz/2020/06/life-in-light-traffic/

<sup>&</sup>lt;sup>27</sup> Marc Daalder, "10 Years to Turn Auckland into Copenhagen," Newsroom, May 18, 2020, https://www.newsroom.co.nz/page/10-years-to-turn-auckland-into-copenhagen.

<sup>&</sup>lt;sup>28</sup> Alistair Woodward, Kirsty Wild, and Rhys Jones, "Climate Policy That Relies on a Shift to Electric Cars Risks Entrenching Existing Inequities," The Conversation, May 27, 2021, http://theconversation.com/climate-policythat-relies-on-a-shift-to-electric-cars-risks-entrenching-existing-inequities-160856.
<sup>29</sup> Eloise Gibson, "Life in Light Traffic: Engineering a Future Minus Cars,"

<sup>&</sup>lt;sup>30</sup> "Social Cost of Road Crashes and Injuries," Ministry of Transport, <u>https://www.transport.govt.nz/mot-resources/road-safety-resources/roadcrashstatistics/social-cost-of-road-crashes-and-injuries/</u>

<sup>&</sup>lt;sup>31</sup> "Road to Zero: A New Road Safety Strategy for New Zealand," accessed March 12, 2020,

https://www.transport.govt.nz/multi-modal/keystrategies and plans/road-safety-strategy/.

injured when moving within the road transport system."<sup>32</sup> These strategies take an ethics-based (rather than cost-benefit) approach to road safety, and shift responsibility for road safety away from individual road users and on to transport system designers and decision-makers. Yet the action plan accompanying *Road to Zero* significantly undermines this ethical approach by making no mention of reducing traffic as a road safety measure. The more we drive, the more we crash, at exponential rates.<sup>33</sup> Meeting the goal of zero deaths on the road, or even making meaningful progress towards it, will not happen without policies to reduce traffic and encourage the use of alternative modes.

## Health and wellbeing

Excess traffic can also contribute to a lack of social connectedness in our cities and neighbourhoods. Communities thrive when people know their neighbours and feel a sense of belonging and connection. The more dangerous people perceive their streets to be, including from high traffic volumes and speeds, the less likely they are to spend time outside and get to know their neighbours. By contrast, when streets are safe, open, and friendly to pedestrians and bicycles, people are much more likely to stop and chat, spend more time outside, and feel a sense of wellbeing and belonging.<sup>34</sup> Reducing traffic volumes and opening up our streets for people can enhance social wellbeing by providing opportunities to connect with others. It can also improve physical health by encouraging children to play outside and prompting more people to use active modes of transport.

A car-dominated transport system has significant negative health impacts in addition to the preventable burden of deaths and injuries from road traffic accidents. Restricted physical activity contributes to high and growing levels of obesity, heart disease, diabetes and other illnesses.<sup>35</sup> Air pollution was associated with an estimated 1,277 premature deaths, 236 cardiac hospitalisations, 440 respiratory hospitalisations, and 1.49 million restricted activity days in 2016.<sup>36</sup> Excessive noise from motorised traffic can disturb sleep, cause cardiovascular and psychophysiological effects, reduce performance and provoke changes in social behaviour.<sup>37</sup>

Research commissioned by Waka Kotahi New Zealand Transport Agency in 2020 found that transport environments that protect good mental health include high-quality walking and wheeling environments, low-stress traffic conditions, and low-cost and accessible public transport systems. The report recommends improving neighbourhood walkability, reducing long commutes, increasing

https://www.transport.govt.nz/assets/Uploads/Research/Documents/e60f942181/Deloitte-Analysis-of-NZ-Road-Toll-Report.pdf

<sup>&</sup>lt;sup>32</sup> Claes Tingvall and Narelle Haworth, "Vision Zero - An Ethical Approach to Safety and Mobility," in *Accident Research Centre* (6th ITE International Conference Road Safety & Traffic Enforcement, Melbourne, 1999), https://www.monash.edu/muarc/archive/our-publications/papers/visionzero

<sup>&</sup>lt;sup>33</sup> "Qualitative and Quantitative Analysis of the New Zealand Road Toll: Final Report" (Deloitte, Ministry of Transport, March 14, 2017),

 <sup>&</sup>lt;sup>34</sup> Ade Kearns et al., "'Lonesome Town'? Is Loneliness Associated with the Residential Environment, Including Housing and Neighborhood Factors?," *Journal of Community Psychology* 43, no. 7 (September 2015): 849–67.
 <sup>35</sup> Frank W. Booth, Christian K. Roberts, and Matthew J. Laye, "Lack of Exercise Is a Major Cause of Chronic Diseases," *Comprehensive Physiology* 2, no. 2 (April 2012): 1143–1211.

<sup>&</sup>lt;sup>36</sup> "Health Effects of Air Pollution," Environmental Health Indicators New Zealand, <u>https://www.ehinz.ac.nz/indicators/air-quality/health-effects-of-air-pollution/</u>

<sup>&</sup>lt;sup>37</sup> "Health Topics: Noise," World Health Organisation, <u>https://www.euro.who.int/en/health-topics/environment-and-health/noise</u>

active commuting, and reducing the cost and improving the comfort of public transport to improve urban mental health.<sup>38</sup>

For all these reasons, Aotearoa New Zealand needs a substantial reduction in traffic volumes in our cities: fewer people driving fewer cars, less often. Policy discussions about traffic reduction, when they happen at all, tend to frame the issue as one of personal choice, and leave it up to motivated individuals to pursue alternatives to driving if they feel strongly enough about it. But leaving it up to individuals to change their transport patterns in a social and physical environment that is often hostile to alternatives will never be enough to achieve the significant changes required. Instead, reducing traffic volumes should an explicit objective of transport policy and decision-making. Forecasting tools should be developed to model the likely impact of new transport projects and investments on VKT, and strong weighting should be given to projects and interventions that are modelled to result in meaningful VKT reductions.

## Risks of attempting to decarbonise transport without adequately considering equity

Because the equity implications of transport decisions tend not to be well quantified or reflected in transport policy and decision-making, there is a risk that Aotearoa New Zealand's decarbonisation strategy, and in particular the VKT reductions anticipated in the ERP consultation document, could be pursued in a way that inadvertently entrenches existing disadvantage or worsens current inequities. This is why we advocate giving equal priority to the twin goals of reducing car dependence and increasing equity in the transport system.

Some of the risks of pursuing VKT reductions without adequately considering equity include:

## Costs falling on those already disadvantaged

Internationally, pricing tools are increasingly considered an important element of efforts to decarbonise transport.<sup>39</sup> They offer a way to reflect some of the externalised costs of driving (like carbon emissions and road deaths and injuries) in the direct cost to individuals, and hopefully encourage people to drive less and use alternative modes where possible.

However, congestion pricing schemes can have significant negative equity impacts, depending on where and how they are implemented. In car-dominated transport systems like ours, it can be very difficult to meet basic transport needs without a car, especially when the existing public transport system does not provide a realistic alternative. Congestion pricing therefore risks worsening existing transport poverty and increasing the already disproportionately high percentage of income that low-income households spend on transport. It also risks worsening transport disadvantage if people opt not to drive because of the new price but lack practical alternatives. This could increase unmet transport need and reduce economic and social opportunities for already disadvantaged groups. Those with greater access to financial resources, meanwhile, may be able to afford to continue driving at the same rates, and the new congestion price may not be set at a level that prompts them to drive any less or take alternative modes, even when these are more readily available.

Tāmaki Makaurau Auckland looks set to be the first city to introduce congestion pricing in Aotearoa New Zealand. The Congestion Question, a joint initiative of central government and Auckland

<sup>&</sup>lt;sup>38</sup> Kirsty Wild et al., "The Relationship between Transport and Mental Health in Aotearoa" (Auckland: NZ Transport Agency and the University of Auckland, September 2020).

<sup>&</sup>lt;sup>39</sup> "The Congestion Question: Main Findings" (Auckland: New Zealand Government, July 2020), https://www.transport.govt.nz/assets/Uploads/Report/TheCongestionQuestionMainFindings.pdf.

Council to investigate the implications of a congestion pricing scheme for Auckland, released its final report in July 2020, recommending that such a scheme be introduced, subject to wider stakeholder engagement.<sup>40</sup> In 2021, Parliament's Transport and Industrial Relations Committee conducted its own inquiry into congestion pricing, using the Congestion Question report as a starting point. It recommended that a congestion pricing regime consistent with the Congestion Question recommendation be introduced in Auckland, and that Parliament progress legislation to enable any New Zealand city to use congestion pricing as a tool in transport planning in future.<sup>41</sup>

The select committee heard many submissions about the potential negative equity impacts of a congestion pricing scheme. They acknowledged these in their final report, but resisted recommending exemptions for disadvantaged groups, noting that a high number of exemptions could increase operating costs and reduce effectiveness of the scheme. Instead, they recommended that the revenue raised by the congestion pricing scheme be used to mitigate its equity impacts.

Depending on how one is implemented, it may also be possible to minimise negative equity impacts of a congestion pricing scheme without exemptions. This requires careful consideration of the days, times, routes, and mechanisms by which the scheme will operate and the transport patterns and unmet needs of a wide range of people.

Equity considerations should be paramount in decisions about how and where Auckland's congestion pricing scheme will operate, as well as in future proposals to develop similar schemes in other cities

#### Benefits accruing to those already advantaged

There is also a risk that without sufficient consideration of equity, benefits of policies to reduce VKT and decarbonise transport could accrue most to those who already have the greatest financial resources and ability to access alternatives. As we saw in Part 1, people on high incomes are already more likely to live within walking distance of public transport and be able to reach their destination with a single trip. Current farebox recovery requirements may encourage public transport operators to prioritise these kinds of profitable, high-patronage routes over-extending better coverage to communities with greater unmet need.

Those with greater resources may benefit more from public transport subsidies because of their ability to pay upfront for multi-trip discounts, and they are also more likely to be able to afford to purchase a bike or scooter to switch to active modes. They tend to own newer vehicles with better safety and fuel efficiency standards than those on low incomes, and they are also more likely to take up the new clean car discount to reduce the price of electric cars. Despite all this, they contribute the most to carbon emissions.

It can be tempting for local authorities to pilot innovative approaches to encourage transport mode shift in areas where there is already good uptake and provision of public transport, because they can integrate more easily with existing infrastructure and may be more likely to succeed. While lessons from such pilots can inform wider implementation of similar projects, their applicability may be limited because of the different travel patterns and mobility needs of more diverse populations.

<sup>&</sup>lt;sup>40</sup> "The Congestion Question: Main Findings."

<sup>&</sup>lt;sup>41</sup> "Inquiry into Congestion Pricing in Auckland," Report of the Transport and Infrastructure Committee (New Zealand Parliament, August 2021).

Policies and projects that aim to reduce VKT in line with the Government's emissions reduction plan will need to be assessed using robust tools to evaluate their equity implications – not only to mitigate their potential negative impacts, but to ensure that only projects that improve underlying fairness proceed. Using this metric, it will be important to identify when the benefits of a proposal are likely to accrue to those who are already advantaged, and either amend the proposal to extend the benefits to everyone or replace it with something fairer.

#### Unwanted or inappropriate interventions

While new policies and projects to reduce VKT and promote active and public transport need to target disadvantaged communities, it is important to note that that the solutions that work for these groups are unlikely to be the same things that work for high income communities.

Rolling out hundreds of kilometres of new cycle lanes in low-income areas, for example, will not necessarily lead to more people cycling unless other underlying factors are addressed first. People experiencing transport disadvantage or poverty are more likely to walk and cycle out of necessity and a lack of alternatives than as a lifestyle choice. Investing heavily in inappropriate active transport infrastructure risks creating underutilised resources and fuelling dissatisfaction if higher-order priorities for the community go unaddressed.

Interventions that could increase equity and reduce VKT in diverse communities might instead be things like wider footpaths, better pedestrian crossings, more bus stops, new and more frequent public transport routes, shared paths that allow family and whānau groups to walk or wheel side by side, safe storage options to protect bikes and scooters from theft, and funding for community transport schemes like shared vehicles and communal bike pools.

Recent research about cycling amongst Māori found that, while Māori cycle at similar (low) rates to non-Māori, this occurs against a "backdrop of stark social, economic and transport-related inequities. Particular barriers for Māori may include inflexible work conditions, concerns about neighbourhood safety, inadequate provision for social cycling, and lack of access to places of [cultural] importance." Potential solutions include more whānau-friendly and culturally safe cycling infrastructure and cycling programmes designed around Māori commitments to whanaungatanga and kaitiakitanga.<sup>42</sup> Without adequate understanding of these barriers, and engagement with Māori, conventional cycling infrastructure is unlikely to succeed at encouraging more Māori to cycle.

The specific changes that could work to reduce VKT and increase equity will look different for every group and community. It will be vital to prioritise robust engagement to understand the lives, transport patterns, unmet needs, values and concerns of diverse populations, and to co-design changes that meet each community's specific needs.

We described what this best-practice engagement can involve in *The Shared Path*:

[Start] with preliminary conversations to identify community views, attitudes, needs and concerns, and [be] open to hearing about and acting on community priorities beyond the immediate project. Engage with mana whenua from the earliest opportunity. Create opportunities to share preliminary designs and ideas with local people in the places where they are, rather than putting things online and waiting for people to make submissions. Set up market stalls, knock on doors,

<sup>&</sup>lt;sup>42</sup> Rhys Jones et al., "Cycling amongst Māori: Patterns, Influences and Opportunities," *New Zealand Geographer* 76, no. 3 (2020): 182–93, https://doi.org/10.1111/nzg.12280.

and hang out in high foot traffic areas to ask questions and share concepts. Conduct proactive local engagement to find out how people feel about their local streets and neighbourhoods and test key concepts. Ensure local disabled people are heard, build support, and emphasise community-wide benefits. When a project is in the trial phase, be nimble and responsive to early concerns and be prepared to make changes and improvements over the life of the project. Be responsive to, and respectful of, local concerns.

#### 'Baked in' inaccessibility and unmet need

As we move towards greater investment in active and public transport, there is a risk that new infrastructure and services may 'bake in' current disadvantage if they are designed based on current use, rather than unmet need.

Existing transport infrastructure already tends to benefit advantaged groups, because it is generally based on the needs of full-time employees commuting into city centres at peak times. We noted in previous sections how this tends to overlook the mobility needs of women, people who work part-time or in multiple jobs, disabled people, and people in low-income areas.

Forecasting demand for new transport infrastructure based on current travel patterns risks perpetuating the same trip patterns and prioritising those who are already comparatively well-served by the transport system, while neglecting areas where there is a high level of unmet need. To offset this risk, the authors of the *Social Impact of Mode Shift* report recommend focusing new investment on trips made by part-time, female, low-income, and ethnic minority groups.<sup>43</sup>

To be able to do this well, research will be required to fill current evidence gaps about the extent of unmet need, forgone trips, and suppressed demand for mobility from disadvantaged groups.

#### Gentrification

The kinds of interventions that can work to reduce VKT and create connected urban communities – like low-traffic neighbourhoods, better active transport infrastructure, and fast, reliable public transport – can also make neighbourhoods more appealing and increase property prices.

In low-income areas and diverse neighbourhoods, this risks pricing out the very residents who were the intended beneficiaries of the changes. This process is known as gentrification, and it risks worsening transport disadvantage and inequity if residents are forced to move into areas with even greater transport challenges. It is a particularly acute risk during a housing affordability crisis like the one we are currently experiencing, because middle-high income earners are increasingly looking to previously low-income suburbs and neighbourhoods for homes they can afford to purchase.

However, concerns about gentrification should not be used as an excuse not to improve transport infrastructure in diverse communities. Rather, these efforts need to be coordinated with wider housing, land use, and taxation policies to reduce the risk of gentrification. Taking deliberate action to ensure that new housing is kept affordable, such as setting affordability restrictions on new developments close to transport hubs, has also been shown to reduce the risk of gentrification.<sup>44</sup>

The risk of gentrification also provides a sound basis for planning large areas together and making changes at the neighbourhood, suburb, and city levels at the same time to avoid creating pockets of

<sup>&</sup>lt;sup>43</sup> Curl et al., Social Impact Assessment of Mode Shift, pp 57–58.

<sup>&</sup>lt;sup>44</sup> Curl et al., p 53.

advantage in some neighbourhoods while leaving others behind. This is especially important when making low-traffic interventions, to ensure that vehicle traffic is not simply displaced from one neighbourhood to the next without achieving meaningful overall VKT reductions.

Avoiding and mitigating these and other risks of insufficiently equitable decarbonisation are increasingly recognised as part of globally responsible climate action. In November 2021, Aotearoa New Zealand signed up to the International Just Transition Declaration at COP26, committing us to:

"Climate change mitigation and adaptation action that is fully inclusive and benefits the most vulnerable through the more equitable distribution of resources, enhanced economic and political empowerment, improved health and wellbeing, resilience to shocks and disasters and access to skills development and employment opportunities."

Our endorsement of the declaration requires us to not only pursue this goal domestically, but to support developing nations and emerging economies to do the same.<sup>45</sup>

## What we can look forward to in equitable, low-traffic cities

What will Aotearoa New Zealand's cities and towns look like in future if we succeed in reducing car dependence, increasing equity, and realising the vision of everybody being able to get where they needed to with a meaningful choice of safe, low-emissions options?

Increasingly, international and local evidence suggests the 'fair path' to decarbonisation leads away from car-dominated cities with a 'hub and spoke' model of commuting from outlying suburbs into the CBD, towards connected, localised urban communities in which people can access most of their needs close to home and have ready access to a range of public and active transport options when they need to go further afield.

Ideally, many residential areas will be low-traffic neighbourhoods, in which vehicle through-traffic will be discouraged, and most street space will be allocated for walking, wheeling, and socialising. It will be common to see children travelling independently to school and playing in the street, and friends and family will be able to ride two or more abreast on safely separated cycle lanes and shared paths.

Public transport will be frequent, reliable, and affordable, especially for those on low incomes. It will be fully accessible for disabled people, and most people will live within a short walking or wheeling distance of a public transport connection.

It will be increasingly common for cars to be communally owned and shared between several families, or provided as a community service by NGOs, marae, neighbourhood groups, and other community organisations. Some people will still own private cars but will use them mostly for longer journeys that cannot be easily duplicated by public or active modes. Those who do need to use cars as their main form of transport will have good reasons for doing so. Most cars will be electric, and there will be affordable, renewable charging infrastructure for them.

Arriving at these equitable, low-traffic cities in the future requires reprogramming the policy settings that govern transport investment now. A visual hierarchy known as the sustainable (or healthy)

<sup>&</sup>lt;sup>45</sup> "Supporting the Conditions for a Just Transition Internationally," UN Climate Change Conference (COP26), November 4, 2021, https://ukcop26.org/supporting-the-conditions-for-a-just-transition-internationally/.

transport pyramid is sometimes used in transport policies and decision-making processes to illustrate the appropriate mode share in a sustainable transport system, from most trips to least:



Optimal transport policy promotes walking, wheeling, public transport, and car-sharing options above private cars for the movement of people in almost every instance.

The sustainable transport pyramid appears in a few local and central government transport policies and planning guides in Aotearoa New Zealand, such as Te Whanganui-a-Tara Wellington's *Urban Growth Plan* and Waka Kotahi New Zealand Transport Agency's *Pedestrian planning and design guide*. But for such policies to translate into outcomes, transport *investment* also needs to be allocated accordingly.

Investments that reduce demand for car travel, create active transport infrastructure, improve public transport, and maintain and improve existing roads should be funded ahead of new roads in almost every instance, but this is a long way from how transport spending is currently allocated. Changing this will require not only embedding tools like the sustainable transport pyramid into Waka Kotahi New Zealand Transport Agency's Investment Decision-making Framework, but also over time reorganising the internal structure and activities of the organisation to reflect the desired outcomes in the transport system.

Arriving at the equitable, low-traffic cities of the future will also require changes to the policy settings that govern how we design, build, maintain and upgrade our cities. We should be aiming to create urban environments that reduce the overall need to travel, shorten the distances between key destinations, and promote social connection.

The 20-minute cities movement envisages urban communities in which residents' basic needs can all be met within a 20-minute walk, cycle, or public transport ride of where they live, and offers exciting possibilities for Aotearoa New Zealand.

## The 20-Minute City: An equitable solution

Around the world, local authorities are grappling with a host of challenges, including transport and health inequalities, climate change, and congested streets and roads.

Aotearoa New Zealand is not immune from having to confront these big complex problems. There's no quick fix, but evidence suggests that the right blend of planning and design can make all the difference in creating cleaner, safer, better-connected and more equal neighbourhoods.

Consider the 20-minute city - an innovative approach to urban design where all the things that contribute to living a good life are within a 20-minute walk, cycle or quick public transport trip. Your home, work, essential services, public amenities and favourite hospitality and retail haunts are just a stone's throw away.

20-minute cities are a response to rising transport emissions and sprawling urban regions where long-suffering commuters sit in heavy traffic or spend hours on public transport getting to and from work. They also nicely respond to transport, health and housing inequalities, and bring communities closer together.

We know that due to issues of geography, cost and practicality, many people in towns and cities across Aotearoa New Zealand don't have equal or easy access to existing transport systems. Plus, those living in distant suburbs or satellite towns are often forced into cars through lack of practical alternatives.

Placing more affordable housing, workplaces and public amenities close together in the heart of local neighbourhoods means there's less need for people to use cars. Private vehicles feature less in the 20-minute city - replaced instead with well-connected paths, streets and public spaces designed for everybody.

#### Prioritising equity and accessibility

A core tenet of the 20-minute city should also be its ability to improve equitable outcomes and improve accessibility for our increasingly diverse communities through effective urban planning and infrastructure design. 20-minute cities connect the dots with non-motorised modes of travel, public transport links, ride sharing and multi-modal transport. This makes it easier for people to quickly get to where they need to be, without a heavy reliance on private motor vehicles, and helps create more equitable and accessible outcomes for everybody in the community.

In adopting a 20-minute city model, the local community and minority groups need a voice in the planning process. Involving locals throughout the process means planners can identify where people are unable to meet their daily needs. Plans can then be shaped around reducing existing neighbourhood inequalities.

Here in Aotearoa, we have an opportunity to create our own definition of the 20-minute city – one that incorporates our unique cultural identity and embraces our unique diversity. Ultimately, success for Aotearoa would be in applying the Te Ao Māori principle of sustainability and stewardship, kaitiakitanga. A 20-Minute city in Aotearoa could also look to and learn from papakāinga, a collective form of Māori living.

#### Build the way we want to live

The concept of a 20-minute city has gained traction recently thanks in part to the global pandemic making it more attainable and desirable.

Globally, our cities have been growing rapidly. By 2050, two-thirds of the projected world population will live in urban centres. Here in Aotearoa, around 86 percent of our population live in cities – and the number is on the up.

We can't continue to build the way we have been. Our cities have largely been designed on post-war principles of people living in suburbs commuting to work in a CBD by motor vehicle. With 70 years of urbanisation came densification and grid-locked cities, which necessitated a re-think in city planning.

Shifts in social behaviour that embrace flexible working, active and environmentally sustainable travel, and a digitally-enabled world where everything is at our fingertips and on demand is driving a return to localism. That's where 20-minute cities come in.

#### Building back public transport

As a result of COVID-19, the public transport sector underwent steep ridership declines and the need to meet major health and safety considerations. This forced transit agencies, local authorities, and related stakeholders to urgently rethink how to address mobility needs in our cities. Far-reaching challenges lie ahead, but opportunity exists for public transport to evolve and once again connect people to each other and destinations both in and beyond their communities. There is significant opportunity to advance the development of integrated, efficient and accessible public transport systems through the concept of a 20-minute city.

Many of our cities in Aotearoa are primed for adopting the features of a 20-minute city – and some like Kirikiriroa Hamilton are exploring the idea. There's a laundry list of reasons for other local authorities to get on board. Plenty of evidence overseas, including in Melbourne, Paris and Portland shows how compact and connected neighbourhoods do wonders for equality of opportunity, quality of life, the environment, and social and community connection.

#### Find out more

Read more about the 20-minute city here: The 20-min city in Aotearoa | WSP.

#### Low-traffic neighbourhoods

Our 2020 report *The Shared Path* made the case for rapidly accelerating the use of low-traffic neighbourhoods in Aotearoa New Zealand. Along with urban planning based on the principles of 20-minute cities, we see low-traffic neighbourhoods as a key intervention to deliver improved equity and reduced car dependence in the transport system. Here we briefly describe how they work. For more detailed information about low-traffic neighbourhoods, and advice for communities and councils wishing to implement them in their area, please see *The Shared Path*.

A low-traffic neighbourhood is a group of residential streets where through-traffic is discouraged. Instead, buses, trucks, and other vehicles driven by non-residents travelling through the neighbourhood stick to identified main roads which border the low-traffic area. People who live inside the low-traffic neighbourhood can drive directly to and from their homes, arrange deliveries, and be accessed by emergency services, but non-residential traffic is discouraged. There are several ways this can be achieved. Often it will involve the creative deployment of wider footpaths, bollards, planting, and traffic calming measures to slow traffic down, direct drivers onto main through roads, and encourage residents to make greater use of alternative modes such as walking, wheeling, or cycling for short local trips. For this to work, the low-traffic area needs to be quite small; ideally, residents should be able to walk or wheel from one side to the other in less than 15 minutes. This equates to roughly one square kilometre. Low-traffic neighbourhoods are also most effective if they are part of an integrated, city-wide plan and network of connected low-traffic areas, so that people can cross easily between neighbourhoods to access key destinations, and in order to keep main arterial routes safe for all.

When well planned and executed, low-traffic streets and neighbourhoods can dramatically reduce traffic volumes, not only in the streets inside the low-traffic neighbourhood, but also in the surrounding residential area. Low-traffic neighbourhoods have also been shown to improve air quality, increase physical activity, benefit local business, and even increase life expectancy. Other benefits of low-traffic neighbourhoods include reduced carbon emissions, increased road safety, and greater health, equity, and social connection.

## An international model: Scotland's National Transport Strategy

Aotearoa New Zealand and Scotland have some interesting parallels. Both are island nations with populations of around 5 million that are ageing and urbanising, and with arguably similar national characteristics, like valuing fairness, relatively high democratic participation, and a strong sense of independent national identity (although our colonial context and Te Tiriti o Waitangi set us apart in important ways).<sup>46</sup>

Scotland's National Transport Strategy for 2020-2040 offers a compelling example of how a comparable country to ours is using policy tools to 'reprogramme' its transport system to deliver different results.

Adopted in February 2020, the strategy leads with a vision for Scotland's transport system:

A sustainable, inclusive, safe and accessible transport system helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors.

It then sets four priorities, that Scotland's transport system will:

- 1. Reduce inequalities (provide fair access to services and be accessible and affordable for all);
- 2. Take climate action (help deliver Scotland's net zero target, adapt to the effects of climate change, and promote greener, cleaner choices);
- 3. Help deliver inclusive economic growth (get people and goods where they need to go, be reliable, efficient, and high-quality, and use beneficial innovation); and
- 4. Improve health and wellbeing (be safe and secure for all, enable healthy travel choices, and make communities great places to live).<sup>47</sup>

These priorities are then used to identify and assess specific actions that will be taken to deliver them, published in annual delivery plans.

Aotearoa New Zealand's closest equivalent, the 2021-2031 GPS on Land Transport, while touching on similar themes, is less concrete in its vision and more technical in its priorities. It states that the purpose of the transport system is to:

Improve people's wellbeing, and the liveability of places.

And its four priorities are:

- 1. Safety (developing a transport system where no-one is killed or injured);
- 2. Better transport options (providing people with better transport options to access social and economic opportunities);
- 3. Climate change (developing a low carbon transport system that supports emissions reductions, while improving safety and inclusive access); and
- 4. Improving freight connections (improving freight connections for economic development).

<sup>&</sup>lt;sup>46</sup> There are other significant differences too – Scotland's population is much less ethnically diverse than ours with 92 percent identifying as white, and the urban population is spread more evenly between the main cities of Glasgow, Edinburgh, Dundee, and Aberdeen, compared to our high concentration of more than one third of the population in the very diverse city of Tāmaki Makaurau Auckland.

<sup>&</sup>lt;sup>47</sup> "National Transport Strategy 2020-2040," Transport Scotland, February 5, 2020,

https://www.transport.gov.scot/our-approach/national-transport-strategy/.

The GPS is accompanied by the Transport Outcomes Framework, which identifies inclusive access, healthy and safe people, economic prosperity, environmental sustainability, and resilience and security as the five key outcomes sought from the transport system. However – unlike the Scottish strategy – these outcomes are distinct from the priorities identified in the strategy. The intent is that the transport system will achieve these outcomes, but the outcomes themselves do not drive Waka Kotahi New Zealand Transport Agency's decision-making about which transport projects to fund in the National Land Transport Programme.

By contrast, by requiring transport investment to be allocated according to the desired outcomes of reduced inequality, climate action, inclusive growth, and improved health and wellbeing, the Scottish strategy generates a radically different prioritisation of transport investment. It embeds the sustainable travel hierarchy (also known as the sustainable transport pyramid, see page 43) in transport-decision making, and commits the Scottish Government to actively promote walking, wheeling, cycling, public transport and shared transport options over single occupancy private car use.

Whether Scotland's strategy delivers on its promise of course remains to be seen and will depend largely on how successful it is at genuinely allocating investment according to its stated priorities.

Nevertheless, there is an important lesson for Aotearoa New Zealand in Scotland's strategy. Embedding the goals of improved equity and reduced emissions directly into the process that determines how transport investment is allocated generates a radically different investment profile. This is more likely to result in tangible progress towards the bold objectives than an outcomes framework that sits alongside, but does not directly determine, how transport decisions are made.

## Street-level changes as part of pandemic recovery

In the UK, street-level changes to make walking and cycling easier and encourage social distancing easier have been a significant component of the pandemic response from central and local government. In May 2020, the central Government made £250 million of emergency active travel funding available to local authorities, resulting in the creation of more than 200 low-traffic neighbourhoods in more than 50 jurisdictions.<sup>48</sup> In London, this investment continued into 2021 with the Streetscapes for London programme issuing funding and guidance to boroughs wanting to make walking, cycling, and public transport safer and easier during the pandemic.<sup>49</sup>

These measures were introduced in recognition of both the immediate challenge of enabling safe social distancing on footpaths and on public transport, and the longer-term implications of the pandemic for social connectedness, public health, and mental wellbeing, recognising that connected neighbourhoods and more opportunities for physical activity could be effective ways to mitigate some of these risks. In London, they are also key strategies for achieving the Mayor's target of 80 percent of trips being made by foot, bike, or public transport by 2041.<sup>50</sup> While popular with many,

<sup>&</sup>lt;sup>48</sup> Natalie Berg, "Peak Car And The Hyper-Local Retail Opportunity," Forbes, October 1, 2020, https://www.forbes.com/sites/natalieberg/2020/10/01/peak-car-and-the-hyper-local-retail-opportunity/

<sup>&</sup>lt;sup>49</sup> "Streetspace Funding and Guidance," Transport for London, https://www.tfl.gov.uk/info-for/boroughs-andcommunities/streetspace-funding

<sup>&</sup>lt;sup>50</sup> "The Mayor's Transport Strategy," Transport for London, https://www.tfl.gov.uk/corporate/about-tfl/themayors-transport-strategy.

neither the goal of replacing car journeys with active and public transport, nor the creation of low-traffic neighbourhoods, are without controversy in the UK.<sup>51</sup>

Here in Aotearoa New Zealand, Waka Kotahi New Zealand Transport Agency created the Innovating Streets Programme in 2019 to support temporary or semi-permanent physical changes to make streets safer and more liveable and in June 2020 the Government announced two additional rounds of funding to make these transitions faster and easier and specifically help councils respond to the challenges of COVID-19.<sup>52</sup> Projects funded by Innovating Streets have included safety improvements to school streets, temporary "play streets" in several cities, and reallocated street space in a major retail precinct in central Auckland to improve accessibility.<sup>53</sup> Unfortunately, the high-profile trial of a low-traffic neighbourhood in Onehunga funded under the scheme was cancelled in May 2021 after vandalism undermined the safety of the project.<sup>54</sup>

The Innovating Streets programme, and street-level changes to improve accessibility and reduce car dependence in urban areas more generally, should continue to play a significant role in helping communities reimagine their neighbourhoods as part of both COVID-19 recovery and decarbonisation efforts. The Government has committed to investing a further \$30 million in the Innovating Streets programme over the next three years, but the exact parameters of this investment are yet to be determined.

In our view, for this to succeed, it will need to be accompanied by wider regulatory, policy, and funding changes to reorient transport policy and spending towards reducing car dependence. The kinds of projects funded by the Innovating Streets programme will need to expand from small, short-term interventions to coordinated, semi-permanent changes at the neighbourhood, suburb, and city levels.

The Onehunga experience illustrates how important it is that local authorities who pursue these kinds of changes are not left exposed by a lack of regulatory and political support. Central government will need to take the lead in creating a national mandate for significant street-level change in all Aotearoa New Zealand's cities, and should implement specific tools – like experimental traffic orders that make it easier for councils to implement these kinds of changes over longer periods of 18 months to 2 years – to buffer local authorities against the short-term local opposition that inevitably accompanies them.<sup>55</sup> It also demonstrates the importance of planning large areas together and progressing multiple, inter-connected low-traffic neighbourhoods at the same time, both to reduce the risk of displacing traffic into adjacent streets, and to increase the likelihood of community acceptance.

<sup>&</sup>lt;sup>51</sup> John Surico, "In COVID-19 Recovery, London Bets Big on Low Traffic," *Bloomberg*, July 29, 2021, https://www.bloomberg.com/news/articles/2020-07-28/how-london-s-low-traffic-streets-keep-cars-at-bay.
<sup>52</sup> "Innovating Streets COVID-19 Guidance," Waka Kotahi New Zealand Transport Agency, <a href="https://www.nzta.govt.nz/roads-and-rail/innovating-streets/COVID-19-guidance/">https://www.nzta.govt.nz/roads-and-rail/innovating-streets/COVID-19-guidance/</a>

<sup>&</sup>lt;sup>53</sup> "Innovating Streets Case Studies," Waka Kotahi New Zealand Transport Agency, <u>https://www.nzta.govt.nz/roads-and-rail/innovating-streets/case-studies/</u>

<sup>&</sup>lt;sup>54</sup> Ben Leahy, "Auckland Traffic: Onehunga Low-Traffic Neighbourhood Trial Cancelled," NZ Herald, May 20, 2021, https://www.nzherald.co.nz/nz/auckland-traffic-onehunga-low-traffic-neighbourhood-trial-cancelled/W53YBTT7WDFAP7HSDQGYH3PNQ4/.

<sup>&</sup>lt;sup>55</sup> Fergus Tate, "Try Then Modify Approach to Traffic Change," Insights (Auckland: WSP New Zealand, June 28, 2021), https://www.wsp.com/en-NZ/insights/try-then-modify-approach-to-traffic-change.

## Four bold ideas to rapidly decarbonise our cities

#### By Rowan Dixon

With the right thinking, funding and public support, there are countless ways we can reduce our transport emissions. Dr Rowan Dixon, WSP Technical Principal, Sustainability and Resilience, pitches four bold ideas for rapidly decarbonising our transport system while not worsening existing transport inequities.

For Aotearoa New Zealand to achieve its target of net zero by 2050, we need to do more to decarbonise our transport sector. Not only does transport account for almost half of the country's total carbon emissions, but it's our fastest growing source of emissions. Domestic transport emissions increased by 90 percent between 1990 and 2018.56 Emissions across the whole economy increased by 24 percent during the same period.

But reducing these sky-high carbon emissions can't be done in isolation. We must also consider existing inequities in our transport system, where not everybody has the same access to public transport and road networks. And importantly, we must not make these inequities worse. With a well-crafted package of policy changes, we can achieve a socially-just and climate-safe transport system that drives broader equity in people's wellbeing and living standards.

Here are four bold ideas to support such a package:

## 1. Ban imports of light internal combustion engine (ICE) vehicles. Now!

The Government has signalled it intends to introduce such a ban from 2035,57 but we need to be more ambitious. Replacing some existing vehicles with Electric Vehicles (EVs) will help reduce climate damaging emissions and harmful local air pollution. A ban today will be complicated because the supply of EVs isn't there yet and supporting infrastructure needs to catch up. Exemptions will be needed for special cases, for example in areas where the infrastructure to support EVs doesn't yet exist. Still, for the sake of bold ideas and to push this urgency along, a total import ban now would shift the carbon reduction dial. It doesn't however address the equity issue, or the congestion issue.

## 2. Buy-back/trade in light ICE vehicles and offer EV subsidies.

Light ICE vehicle buy-back approaches seem to have worked elsewhere to remove a bunch of them from streets. It will cost a fortune to replace all 3.3m light ICE vehicles in Aotearoa New Zealand. The Government is already giving taxpayer-funded rebates for new and used EVs. But we should explore linking eligibility to our welfare and tax systems to ensure equity and support to those that need a vehicle. This kind of government support would be the equitable way to ensure fair access to EV ownership. Otherwise, there's a real risk that a portion of our population are left stuck paying high fuel prices and maintenance on aging cars, with no other option.

#### 3. Supercharge incentives for public transport

Getting more people out of cars and onto public transport will go a long way towards decarbonising our cities. To encourage greater use of public transport, we should offer incentives or subsidies that reduce the cost to users – things like free or discounted bus and rail passes. Overseas, incentives like these have been shown to increase public transport use and get commuters out of cars and into

<sup>&</sup>lt;sup>56</sup> <u>https://www.stats.govt.nz/indicators/new-zealands-greenhouse-gas-emissions</u>

<sup>&</sup>lt;sup>57</sup> https://evsandbeyond.co.nz/nz-ban-on-new-ice-passenger-vehicle-sales-suggested-from-2035/

active travel options that are better for the environment and people's health and wellbeing. They can also help people reach that 'Eureka' moment in realising that public transport can be a valuable, usable alternative. In Aotearoa New Zealand we prioritise SuperGold card users, who can travel free on off-peak rail, bus and harbour ferry services. But why stop there? Let's extend the same kinds of free and heavily discounted fares to others in the community, including under 25s and low-income groups.

#### 4. Embrace car-less cities and prioritise people over road traffic.

Without cars, we can give priority to more equitable and accessible ways of getting around. When it comes to bold ideas, you might think car-less cities takes the cake. But it's already happening elsewhere in the world, such as in Merwede, a 'car-less' neighbourhood development in the Netherlands.<sup>58</sup> We're starting to see a small number of similar developments in Aotearoa New Zealand. In Merwede the neighbourhood's 12,000 residents will still require access to some form of car-based transport from time to time. That's why it's estimated that there will be three spaces for every 10 households reserved for cars and 300 of these will be for shared vehicles. A large number of Merwede's apartments will also be dedicated to social housing, with cheaper prices that allow access to a wider majority of the population. These kinds of equitable game-changing ideas that prioritise people and wellbeing over cars and roads require a sizeable investment. But it's the right thing to do.

Over the past two years as we've been in and out of COVID-19 lockdowns, we've found a renewed sense of place in our own neighbourhoods – without cars. Let's leverage our new-found love for our local communities to usher in our very own largescale Aotearoa Neighbourhood Project. Why not run more neighbourhood events, craft pedestrian-friendly bylaws, and establish new norms that pull people out onto the streets to bump into each other and embrace local living – weaving ourselves into other people's lives, into our place to stand, to belong and be noticed. *He aha te mea nui o te ao? He tangata, he tangata, he tangata.* 

<sup>&</sup>lt;sup>58</sup> <u>https://dutchreview.com/traveling/cities/utrecht/utrechts-exemplar-city-design-that-prioritises-people-over-cars/</u>

## Te Ara Matatika: how we can transition to the equitable low-traffic cities we need

We opened this report two people's stories: Hana the social work student in 2021 and Aisha the trainee teacher in an imagined 2040. The two were in comparable situations, with similar resources and backgrounds, but had vastly different experiences, due in large part to the different factors governing transport and urban planning in the two scenarios.

In our current transport system, Hana made a series of choices that seemed logical: she bought a car using the finance available to her to take advantage of relatively cheap parking and a convenient commute to university, and to keep herself safe from harassment and violence. As the consequences of these choices within an inequitable system began to compound though, things spun out of Hana's control, and we left her spending more than a third of her income on transport-related costs, mostly to service debt on a car that she couldn't drive. She was also vulnerable to violence and harassment after work at night. Who could blame her if she gave up and started driving her unwarranted car again one night? If she did though, she'd risk further fines and a possible criminal conviction, which could set her off on a very different path from the social work career she aspired to.

There are many people in situations just like Hana's in 2021.

Aisha, on the other hand, enjoys a largely unconstrained mobility in our imagined 2040. Aisha lives in an intergenerational kaupapa Māori community, grounded in her whakapapa and connected to the whenua. She can walk and wheel safely and easily anywhere she needs to go both within her community, and nearby. To get to uni, she can take fast, reliable public transport that avoids the stress of driving and costs her nothing. Aisha and her whānau enjoy moving together for fun and recreation, and the infrastructure that enables this supports Aisha to show whanaungatanga. Aisha feels safe and secure in the transport system, whether she's biking with little kids or out late at night. Aisha's papakāinga produces net zero emissions and her wider neighbourhood is a low-traffic neighbourhood; importantly, Aisha feels a sense of ownership and connection to these climate change efforts. Thanks to a meaningful Te Tiriti partnership to deliver papakāinga at scale, and coordination between transport, housing, urban development, and social development agencies, Aisha not only experiences equitable mobility, but also equitable housing, income, and employment opportunities. As a result, it is within her reach to plan an overseas trip to celebrate a significant milestone like her forthcoming graduation, and the criminal justice system is not even on her radar.

If our leaders choose the right policy settings now, we could transform many experiences like Hana's into experiences like Aisha's within the next two decades. At the same time, we could also rapidly decarbonise urban transport and meet our climate change goals. Equitable, low-carbon cities, where everyone can get where they need to go and participate fully in society, are within our reach, but we need to act fast.

If our leaders don't put the right conditions in place now, we stand little chance of meeting our ambitious emissions reduction targets or getting on top of runaway climate change domestically or globally. Thousands of people will continue to be injured and killed on our roads each year, current inequities in the transport system will be entrenched and worsen, and the mobility needs of many disadvantaged communities will continue to go unmet, contributing to wider inequity and injustice.

Fortunately, we are in a moment in which the need to rapidly decarbonise transport – and the fact that this cannot be achieved without massive VKT reductions from private vehicles – is increasingly understood and accepted, by policy-makers if not yet the wider public. It seems likely that VKT

reduction will feature as a key target in the first Emissions Reduction Plan when it is finalised next year. Clearly, there is a significant gap between where we are now, and where we need to be. We are entering the transition to a low-emissions future, and it will be challenging.

As Associate Professor Maria Bargh (Te Arawa, Ngāti Awa) has noted, Aotearoa's necessary transition to a low-emissions future "will require trade-offs and, at best, some uncomfortable changes for individuals, households, communities, the private sector, and government." She emphasises that "to be enduring for Aotearoa, the transition must be tika."<sup>59</sup> By a tika transition, Bargh means applying a framework of tikanga Māori, Treaty of Waitangi obligations, and international law to decision-making and policy planning for Aotearoa's low-emissions future.<sup>60</sup>

This tika transition needs to be bold and ambitious. It also needs to be just and fair. Equity concerns are not a reason to stop or slow our climate change response. The planet can't wait, and the equity impacts of an unchecked climate crisis will be even worse than what we currently experience.

Instead, we need to embed the twin goals of improving equity and reducing car dependence as key planks of a reprogrammed transport system, starting now. We need to radically and quickly change how we allocate transport investment, and we need much greater collaboration between transport agencies and other sectors like housing, social development, and local government to improve how our cities work for the people who live in them.

We have five overarching recommendations that would help to fairly transition Aotearoa New Zealand's cities to the connected, low-traffic communities we need for a decarbonised future. Under each, we direct more detailed recommendations to relevant Ministers and agencies.

<sup>&</sup>lt;sup>59</sup> Maria Bargh, "A Tika Transition," in *A Careful Revolution: Towards a Low-Emissions Future*, ed. David Hall, BWB Texts (Wellington: Bridget Williams Books, 2019), 36.

<sup>&</sup>lt;sup>60</sup> Bargh sets out a *Tika Transition Toolbox* which identifies elements from tikanga, Te Tiriti o Waitangi, and relevant UN conventions, and proposes a (non-exhaustive) list of questions that decision-makers can ask to ensure that their decisions to move Aotearoa towards a low-emissions future are tika. The *Tika Transition Toolbox* appears in *A Careful Revolution* and is reproduced in full in our previous report *The Shared Path*.

## Recommendations

## 1. 'Reprogramme' the transport system

We recommend that the Minister of Transport:

- 1.1. In either the next GPS on Land Transport, or a new national transport strategy, set an ambitious and specific vision for the transport system, that emphasises the importance of universal access, affordability, safety, reducing emissions, and improving wellbeing.
  - 1.1.1.For example: "Everybody in Aotearoa New Zealand can get where they need to go affordably, accessibly, and on time, with a meaningful choice of safe options that meet their needs, protect the climate, and promote wellbeing."
- 1.2. Set at least two strategic priorities in support of this vision that include making the transport system work better for those currently disadvantaged and reducing collective dependence on private cars as the main form of urban transport.
- 1.3. Comprehensively integrate the Transport Outcomes Framework into the GPS (or new strategy) and into Waka Kotahi New Zealand Transport Agency's investment decision-making framework, so that the outcomes sought *are* the strategic priorities, and transport policy and investment decisions are actively determined by them (not just assessed against them).
- 1.4. Introduce legislation to support local authorities and transport agencies to make streetlevel changes that improve accessibility and reduce traffic volumes, including creating experimental traffic orders to encourage the creation of low-traffic neighbourhoods at scale.
- 1.5. When it is next updated, align the Road to Zero Road Safety Strategy with this vision by incorporating improved equity and reduced car dependence as road safety priorities.
- 1.6. Direct the board of Waka Kotahi New Zealand Transport Agency to:
  - 1.6.1.Shift from a 'predict-and-provide' investment model based on current assumptions about car traffic growth, to a 'decide and provide' investment framework based on reducing VKT, increasing mode-share of active and public transport, and maximising opportunities for people to live, work and play in their local communities.
  - 1.6.2. Include analysis of unmet mobility needs in its investment decision-making framework.
  - **1.6.3**.Require local authorities to gather data about unmet mobility needs and to provide before and after evaluations of equity outcomes as a condition of receiving transport funding subsidies.
- 1.7. Direct Te Manatū Waka Ministry of Transport to:
  - 1.7.1. Further develop and refine methods and tools to assess the equity and VKT reduction implications of transport decisions.
  - 1.7.2.Embed and socialise these tools across the transport sector and actively use them to assess new projects, prioritise work programmes, and allocate investment.

1.7.3.Gather or commission research that fills current knowledge gaps about transport equity, especially about forgone trips, unmet need, and latent or suppressed demand for mobility from disadvantaged groups.

## 2. Make sure the transition is tika (right and just)

We recommend that the Government:

- 2.1. Work in partnership with Māori to uphold its Te Tiriti o Waitangi obligations in the transport system. This could include:
  - 2.1.1. Developing specific strategies to improve transport outcomes for Māori.
  - 2.1.2. Setting requirements for Māori representation on transport decision-making bodies.
  - 2.1.3.Supporting hapū, iwi, and kaupapa Māori organisations to play a larger part in transport decision-making and governance, for example by providing resources to support Māori organisations to upskill on transport issues, or by ensuring that mana whenua views are always gathered and listened to on projects in their rohe.
  - 2.1.4. Funding kaupapa Māori community transport solutions like marae-based shuttles to provide healthcare access or kōhanga reo pick-up and drop-off services.
- 2.2. Ensure representation from currently disadvantaged communities and individuals on transport governance and decision-making bodies.
- 2.3. We recommend that local authorities and regional transport governance bodies:
- 2.4. Apply the principles of tika (right and just) transition and use the tika transition toolbox to evaluate all transport projects and investments.
- 2.5. Co-design new urban transport infrastructure and street-level changes to improve accessibility and reduce traffic with affected communities.

#### 3. Reduce the overall need to travel

We recommend that the Ministers of Transport, Housing and Urban Development, and the Environment work together to:

3.1. Make reduction in VKT an explicit goal of new development as part of the Resource Management Act reform currently underway and require transportation impacts to be mitigated through a net increase in walking, cycling and public transport that is greater than any forecast increase in car trips.

We recommend that the Minister of Housing and Urban Development:

- 3.2. Issue guidance under the National Policy Statement on Urban Development that emphasises the need for new developments to reduce the overall need to travel, shorten the distances between key destinations, and promote social connection in urban communities.
- 3.3. Ensure that these principles underpin all Kāinga Ora-led urban developments, and encourage Kāinga Ora to pilot the 20-minute city approach in Aotearoa New Zealand.

We recommend that local authorities:

- 3.4. Use appropriate policy and regulatory tools to mandate urban planning and placemaking that reduces the overall need to travel, shortens the distances between key destinations, and promotes social connection.
- 3.5. Embed the principles of 20-minute cities into relevant plans, policies, and spatial planning guidelines for their cities.

## 4. Make sure the costs and benefits fall in the right place

We recommend that Cabinet:

- 4.1. Ensure that forthcoming legislation to enable congestion pricing schemes in all Aotearoa New Zealand cities emphasises the need for these schemes to maximise equity by redirecting revenue into more efficient, frequent, direct public transport services, beginning with low-income communities.
- 4.2. Coordinate efforts between government agencies to align transport, climate change, housing, land use, taxation, and income policies to increase equity, reduce all forms of social and economic disadvantage, and meet emissions reduction targets. Focus these efforts in particular on:
  - 4.2.1.Ensuring equity considerations are central to the final Emissions Reduction Plan and supported by specific actions to increase the fairness of the transport system.
  - 4.2.2.Aligning housing, transport, and land use policies to reduce the overall need to travel, reallocate street space to increase accessibility and reduce VKT, and reduce the risk of gentrification.
  - 4.2.3.Ensuring people have adequate income to participate fully in society.
- 4.3. Establish a fund to encourage the development and expansion of low-carbon, shared community transport solutions to reduce the need for individual vehicle ownership and help communities to meet self-defined priorities. This could include (but is not limited to) ideas like shared community vehicles, affordable mobile shopping and delivery options, school and ECE pick-up services, late-night shuttles for shift workers, or communal transport for sports clubs and cultural activities.
- 4.4. Target future financial incentives to encourage mode-shift, such as subsidised public transport fares and rebates for zero-emissions vehicles, towards those who are currently most disadvantaged in the transport system.

We recommend that local authorities and transport agencies:

- 4.5. Ensure equity considerations are paramount in decisions about specific operation of any future congestion pricing schemes (including the scheme currently proposed for Tāmaki Makaurau Auckland).
- 4.6. Pilot innovations like reallocated street space, new active transport infrastructure, and incentives to use active and public transport in a wide range of settings, to ensure that the results are representative of diverse communities and reflect their actual transport challenges.

- 4.7. Co-design low-carbon community transport solutions directly with communities experiencing transport disadvantage and poverty, and ensure funding mechanisms are flexible enough to enable a wide range of these community initiatives.
- 4.8. Design new and upgraded urban transport infrastructure based on current unmet mobility needs, rather than on current patterns of demand.

#### We recommend that Waka Kotahi New Zealand Transport Agency:

4.9. Incentivise more affordable, reliable, and accessible public transport for those currently disadvantaged through reinvesting fares in subsidised transport for low-income people, alongside investment in better public transport in low-income communities.

## 5. Kickstart the transition

We recommend that the Government:

5.1. Consider a bold intervention to incentivise rapid mode shift, such as making public transport free for Community Services Card holders and/or young people under 25, and committing significant new investment to improving public transport frequency, reliability, and accessibility in low-income areas.



24 November 2021

ESM0300/01/01 2021 TMB

Ministry for the Environment.

#### TE HAU MĂROHI KI ANAMATA: HORIZONS REGIONAL COUNCIL SUBMISSION

Thank you for the opportunity to comment on Te hau marohi ki anamata.

At Horizons Regional Council (Horizons) we strive to make our region a place where the land and water is healthy and the people are thriving. Our region extends from south of Levin to north of Taumarunui and from Whanganui across to the east coast – approximately 22,000km<sup>2</sup> in total. Horizons' responsibilities include managing the region's natural resources, flood control, monitoring air and water quality, pest control, facilitating economic growth, leading regional land transport planning and coordinating our region's response to natural disasters. Climate change has a bearing on many of those functions.

While so much of our recent attention has been devoted to the immediate challenge of Covid-19, climate change remains the biggest long-term challenge facing New Zealand's communities and environment.

We note that work remains to flesh out many of the strategies and options the plan envisages. We acknowledge that – in an area as wide-ranging as greenhouse gas emissions – aspects of any plan will be at different levels of maturity. There are many ways in which the tools at our disposal, role clarity, funding arrangements and process efficiency can be improved upon.

Complex challenges like reducing our carbon footprint do not adhere to administrative boundaries. The success of our response will rely on the initiative of many parties, and upon relationships that allow us to coordinate our efforts and respond flexibly as circumstances change. To that end, councils in our region have formed a climate action joint committee, with strong tangata whenua involvement. We were pleased to hear from Minister Shaw when the committee met in September, and would welcome the ongoing involvement of officials to ensure we understand each other and our efforts are aligned.

Rather than repeat points we have already made, we draw your attention to recent previous submissions to the Climate Change Commission and Ministry of Transport. Our comments here focus on a few key areas in which Horizons has direct experience and operational expertise. They coalesce into five main themes:

- We support urgent, systemic change.
- We support many aspects of the proposed approach, including integrated action on transport emissions.
- We encourage Government to consider a similarly integrated approach to address the multiple issues affecting rural communities.
- Like others local government leaders, Horizons is committed to tackling the challenges presented by climate change.
- We encourage Government to invest in a genuine partnership with local government to respond to these challenges.

We expand on each of these themes below, with recommendations as to how plans could be strengthened.





#### SYSTEMIC CHANGE IS NEEDED. NOW.

The discussion document proceeds from the premise that deep and long-term systemic change is required, and that Government should take a central role in driving it.

We support this, including the need to reset planning frameworks and transport patterns, a greater emphasis on permanent forest sinks and the co-benefits they bring, rather than offsetting emissions with plantation forestry.

We also support attention to practice change and the range of tools – education, funding, other incentives, alongside regulation and pricing – that can be brought to bear to remove barriers and create enduring change. The support of the community is crucial – not least of all, because meeting our emissions budgets requires active intervention as well as commitment from individuals and businesses.

Given the scale and urgency of the challenge, the process will often be experimental. It is likely that we will have to try several "good" approaches and see what works, rather than attempting to craft the one, perfect solution. Essentially we are suggesting an adaptive approach. Horizons, like other regional councils, have experience with this sort of challenge, through our work on fresh water over the past ten to fifteen years. The plan will need to include both quick wins that make best use of existing assets and larger interventions for longer-term transformation. Progress needs to be made before every last detail has been pinned down. We are pleased to see these elements in the discussion document – if a little dismayed at how much strategy work remains to be done. Clear, consistent and timely signals are essential for the public, businesses – and local government – to adjust their plans and expectations.

Alongside regulation and pricing, funding is one of the key signals Government can send to encourage the action and investment it wishes to see. We note that elements of the plan are subject to future funding decisions. We trust that alignment with Budget 2022 will allow for many of these decisions to be made by the time the plan is released. In our experience, well-directed funding can support rapid and practical action on the ground.

#### SUPPORT THE FOCUS ON INTEGRATED ACTION ON TRANSPORT EMISSIONS

We are encouraged by the focus on working closely with local government to reduce transport emissions while also enhancing urban environments and community wellbeing. We support the broad strategy of reducing the need to travel (through urban design) and shifting travel to low-emission modes, as well as improving the emissions efficiency of the vehicle fleet. As the discussion document notes, this will require alignment of planning, investment and other interventions across multiple domains. Since so much of this change is about individual choices, low-emissions options must be easy, attractive and social without prohibitive cost.

Alignment of planning regimes (including reconciliation of housing and environmental objectives) and removal of bureaucratic barriers to action are essential if we are to build more liveable, emissions-efficient towns and cities. The current process to unlock transport funding is long, cumbersome and expensive. We urgently need to find ways to accelerate delivery of improvements like public transport improvement, priority for bus and active transport facilities.

Other adjustments to regulatory settings may also support mode shift – for example, giving priority to buses merging into traffic and removing car parking spaces in CBDs. Making active transport attractive means making it safe. In many places, cyclists are required to share the road with motor vehicles. Unlike cars and trucks, they lack airbags and crumple zones. With the increase in uptake of electric micro-mobility devices such as e-scooters, we see this issue being exacerbated. Pedestrians and cyclists each need separate, well-designed lanes. Government might consider national policy to ensure that parking does not get in the way of


providing safe passage for active transport users. Government could also consider weighting the 'presumption of fault' in favour of active transport users where accidents occur. Funding will need to be made available (with a minimum of fuss) to support these changes. Government might consider allocating a proportion of the capital budget for transport to active modes. Equally, revenue from proposals such as congestion charging could be invested to enable a just transition to active transport modes.

Both regulatory changes and removal of other barriers may need to be accompanied by measures to ensure a mandate is built and maintained with the general public: allowing councils to reallocate street space, for example, is unlikely to be effective if they face backlash every time they do. Central government should take a lead in securing that mandate.

We also support the distinction drawn in the discussion document between rural areas where fewer alternatives exist – and urban areas. This makes sense, given that the cities are where the largest gains are likely to be made. There is however, some risk that opportunities for mode shift outside main centres are overlooked. In medium-sized urban areas like Palmerston North and Whanganui, smaller populations and 'small town' expectations of lifestyle and convenience present a slightly different set of challenges than in the larger centres. Our region also includes some smaller towns (Levin, Feilding) that are growing: urban form will be important as they do so, to enable alternative modes of transport – but in the near term, populations do not support many viable public transport options due to constraints associated with the legislative and funding environment. In both scenarios, there would be merit in considering how to future-proof development and achieve emissions reductions in the interim, while Government's attention is focused on the metropolitan areas. Do we focus on decarbonising the existing public transport fleet, or on other modes of transport? How will the future funding model accommodate the needs and constraints of smaller centres? Guidance on questions like these would avoid duplication of effort and associated delays. That said, all regions will have a mix of things that will work and 'low hanging fruit'. There must be some flexibility in the framework. We are encouraged to see this recognised in the discussion document.

The document touches on the role freight will play in reducing emissions, however we consider the ambition associated with mode-shift for freight to be lacking. In short, modeshift needs to be applied to freight as well as people and the Emissions Reduction Plan needs to address this. The document identifies the Rail Plan as a tool for reducing freight emissions. We support this, but note that the Rail Plan in its current form will struggle to deliver on this intent, since its focus is on passenger rail and maintenance. Large volumes of freight pass through the Horizons region, accounting for a significant proportion of our carbon emissions. Our current Regional Land Transport Plan identifies mode shift onto rail as a key lever for reducing freight emissions in our region. Funding, at present, is largely drawn from sources other than the National Land Transport Plan / Rail Plan, such as the Provincial Growth Fund. We suggest acceleration of the Rail Plan, along with more focus on freight movement by rail will need to occur in order to address freight volumes and funding constraints in this area. Hubs for efficient inter-modal transfer are critical. The region is working with central Government to construct a major new hub near Palmerston North (road, rail, air) and a secondary hub near Marton (road, rail). Rail could also play a greater role in inter-regional passenger transport. Further, we acknowledge and support the role coastal shipping could play in providing cost-effective, attractive alternatives for long-haul freight. Market and regulatory reform is needed to provide certainty to operators and incentivise change

We encourage the Government to consider alignment of plan development and funding cycles. At a local level, action on transport emissions will likely be through the 2024 review of RLTPs and LTP redevelopment. To make best use of that opportunity, we will need to understand what funding is available and what criteria will be applied well in advance. If criteria



for investment in roading are to change, we suggest that it be strongly signalled through the Government Policy Statement on Land Transport. More broadly, we suggest that reform of the public funding system, and of cumbersome investment / business case processes, is also necessary to ensure funds are levied fairly and available where – and when – they are required. A comprehensive approach to funding should include review of tax incentives (and disincentives) to support low-carbon choices at an individual level.

#### ENCOURAGE SIMILAR INTEGRATION OF RESPONSE FOR RURAL COMMUNITIES

A similarly integrated approach would have merit to address the challenges confronting rural communities and ensure transition delivers positive outcomes.

Agricultural communities face pressure on a number of fronts as we move to tackle greenhouse gas emissions, improve fresh water, and restore biodiversity. Farming systems also have to adapt to the effects of a changing climate including drought, flooding, and water availability. Transitioning the rural sector through these challenges demands a coherent response across agencies and policy domains. We encourage Government to work with regions to connect land use transition that may occur in response to climate change with desired outcomes for freshwater, biodiversity, and communities.

When the Climate Change Commission consulted on its advice earlier this year, we expressed concern about the effects of poorly placed plantation forests on local communities, and the missed opportunity of poorly managed forests (and pests) for the environment. We are pleased to see these issues reflected in the discussion document. Permanent forest sinks have the potential to contribute to biodiversity and the health of catchments as well as sequestering carbon. Pests and weeds need to be managed to realise that potential. Forms of forestry can be integrated into other farm systems to achieve better environmental and business results. Nonetheless, setting the right incentives and enabling conditions to encourage forest establishment in places that optimise environmental and community outcomes presents some significant challenges. Policy around carbon farming will be crucial to avoid creating new legacy issues.

We acknowledge and support work being conducted through He Waka Eke Noa in partnership with industry to tackle on-farm emissions. Involving those impacted in developing solutions is much more likely to result in enduring change.

By its nature, He Waka Eke Noa focuses on improvements within an industry. It relies principally on price signals and new technology. That is crucial. But we are not certain it will be enough.

The discussion document asks how Government can help reduce barriers to lower-emission farming systems and products. Alongside He Waka Eke Noa, we see a need for a coherent response to support more fundamental changes where they are necessary. We are aware of several barriers facing landowners considering diversification or changes in land use away from traditional industries. Information – about the commercial feasibility of alternative crops, suitability of soils and climate, and future availability of water – may be hard to access. Supporting infrastructure (processing, pack houses, etc) may be lacking in the local area. Of greatest significance is understanding markets and the demand for new products. There may be a lack of confidence in the direction that policy and regulation will take and, at times, a lack of trust in government. Investment in these areas would help to deliver on policy objectives across fresh water, climate, biodiversity, and other issues, and support an equitable transition for farmers and their communities.



#### LOCAL GOVERNMENT CAN HELP

The emissions reduction plan is a national plan, but local government will play a significant role in its delivery. Regional councils contribute directly in areas like transport, resource management planning, pest control, and afforestation. As the gap between identified policy interventions and the carbon budget for 2022-25 makes clear, success will also depend on the actions of businesses, institutions, and the wider community. Local government helps to set the context within which businesses invest and citizens make choices.

The discussion document acknowledges that a strong commitment from local government leaders is critical to success in confronting the challenges presented by climate change. With other local government leaders, we expressed that commitment in signing the Local Government Leaders' Climate Change Declaration in 2017. We have followed up on that commitment through our last long-term plan and by establishing a climate action committee together with the region's territorial authorities. Government could consider having officials be active observers in these meeting helping to connect local, regional and national action.

There are barriers that Government could remove that would enable us to contribute to emissions reduction more effectively. Some of these have been identified above – and some are acknowledged in the discussion document itself. These include competing drivers in the planning system, and consistency of purpose between departments. Planning and decision-making processes could be made more efficient. Funding mechanisms need attention. We have touched on this in relation to transport above; the point holds more generally. Councils, Government agencies, iwi and other groups will need to be appropriately resourced if we are to deliver the intended effect. Some organisations will need more support on some aspects of the low-emissions transition than others.

There could be more attention to national guidance and investment in data sets to make information available for local decision making. Regional greenhouse gas inventories being produced by Stats NZ are a positive development, though at the moment they do not connect well to action. There may be merit to changes such as reporting to a district or city level in future.

An area that would merit closer attention, and in which local government is well-placed to help, is in empowering communities to make positive changes. Government could, for example, consider greater use of community grants and funding for low-carbon initiatives – perhaps administered through local government. We are aware that some councils run schemes to support clean heating, solar power, and home insulation; there may be merit in funding initiatives like these at a national level to support an equitable transition and reduce household emissions

Given the importance of human behaviour, individual choices, and social norms to change, we suggest national investment into social science research to inform intervention at national and local scales.

There may be other areas in which local government could bring resource and expertise to bear as part of a coordinated, cross-agency effort.

#### GENUINE PARTNERSHIPS BETWEEN CENTRAL AND LOCAL GOVERNMENT

Business as usual won't do if we are to deliver the scale of change required within the time available.

Horizons enjoys positive, productive relationships with many parts of Government. In most contexts, though, those relationships fall short of their potential. The discussion document



acknowledges this, observing that bold decisions and strong collaboration with central government will be required of local government to ensure a joined-up approach to decrease emissions.

Partnership goes beyond "mobilising resource" from local government. It requires trust. We echo comments by the Local Government Review Panel emphasising the need to address issues impacting on relationships – and limiting our collective impact.

We agree that role clarity is important and processes and accountabilities can be better aligned. Nonetheless, we – along with industry and other groups – will often have to use tools in concert to achieve a result. Since so much of the transition will happen at a local scale, this means investment of time and personnel to understand local issues. It requires regular and ongoing dialogue about how best to integrate national and local responses and about the suite of measures that will best achieve change.

Tools (including regulation) to be deployed by local government should be developed with the involvement of local government. The recent project to generate national guidance on local climate change risk assessments was a positive example in this regard, with work commissioned by the Ministry for the Environment and informed by the close involvement of a local-government reference group.

We also note the importance of local iwi and hapū in terms of the Treaty partnership in general and to local decision making in particular. We all have work to do to find ways to give expression to that partnership in ways that deliver on our respective aspirations and enable us to respond effectively to the challenges that confront us. Recognition of relationships between people and the environment, as expressed in legislation specific to Te Awa Tupua and Te Waiū o Te Ika, for example, will have a bearing on how that partnership develops.

We commend you on the thought and effort that has so far gone into New Zealand's first emissions reduction plan and thank you for the opportunity to comment. We look forward to working with Government and communities across our region to transition to a low-emissions and climate-resilient future.

Ngā mihi,

Rachel Keedwell CHAIR

# SUBMISSION ON Emissions Reduction Plar Discussion Document

24 November 2021

To: Ministry for the Environment Name of Submitter: Horticulture New Zealand Supported by: Tomatoes New Zealand, Vegetables New Zealand, Citrus New Zealand, Summerfruit New Zealand, Persimmon Industry Council, NZ Feijoa Growers Association.

# **Contact for Service:**

Michelle Sands Manager - Environment Horticulture New Zealand PO Box 10232 Wellington Email: michelle.sands@hortnz.co.nz



# **OVERVIEW**

# **Submission structure**

Part 1: Introduction and overall comments

Part 2: Specific commentary on the Emissions Reduction Plan discussion document

Appendix A: NZIER Report - Covered Crops Decarbonisation Problem Definition for Transition

# **Our submission**

Horticulture New Zealand (HortNZ) thanks the Ministry for the Environment Council for the opportunity to submit on the Emissions Reduction Plan (ERP) discussion document consultation.

We welcome any opportunity to work more closely with the Ministry for the Environment and to discuss our submission.

The details of HortNZ's submission and the outcomes we are seeking are set out later sections of our submission.

# **Executive Summary**

Horticulture has a role to play in New Zealand's transition to a low emissions economy and in meeting our 2050 targets. We welcome the opportunity to feed into the development of the Emissions Reduction Plan.

New Zealand's 2050 climate target needs to provide for a realistic and fair transition for food production, taking into consideration environmental, social and economic impacts, including global emissions and food security.

The Paris Agreement speaks to a 'fundamental priority of safeguarding food security' and action in a manner that does not threaten food production. It is important that New Zealand retains the ability to provide for our own fruit and vegetables - in terms of availability, but also affordability. Rising produce costs contribute to food insecurity in New Zealand; and as prices increase, consumption of fruit and vegetables decreases.

It is important to assess the impact on food security from policies in the emissions reduction plan and global emissions related to the timing of technology availability and the carbon price.

# **Transport sector**

In the Emissions Reduction Plan:

- It is important that targets for decarbonisation are supported by investment into developing commercially viable options.
- We support the development of a National Freight and Supply Chain Strategy this should take into consideration specific requirements and considerations of the horticulture sector.
- There could also be strategic planning opportunities which support mode shift, where the location is appropriate - e.g. A rail hub near Pukekohe connecting to Auckland and Tauranga Ports would significantly reduce road freight movements through Auckland.
- We seek clarity on the scope of proposed congestion pricing (and whether this includes freight, and if so, the approach).

# **Energy and industry sector**

In regard to the approach to energy and industry in the ERP:

• HortNZ support the development of a New Zealand Energy Strategy. This needs to address concerns relating to security of supply for low emissions fuels (such as biomass and electricity, in particular), explore options for greater distributed federation and energy hubs that could deliver co-benefits (refer section 7.1).

- The phase-out of gas needs to be carefully managed to maintain security of supply in the interim period (refer section 7.2).
- We support investment and/or facilitation in developing robust markets for lowemissions fuels supply (refer section 7.4).

Specifically in respect to the greenhouse growing sector, there is a high risk that rapidly rising energy and carbon costs will result in greenhouse growers exiting the market. Investment and strategy to enable transition for greenhouses, so we can continue to grow these crops in New Zealand is needed. The sector is undertaking work with EECA on a decarbonisation plan to support and enable transition, however this takes time. It is the interim period we are concerned about – growers going out of business before they are able to transition.

• We seek to engage with Government on a solution that would assist the greenhouse growing sector to decarbonise, through the redesign of assistance currently provided as industrial allocation under the Climate Change Response Act (refer section 7.3).

# **Agriculture sector**

HortNZ supports the He Waka Eke Noa partnership work in developing settings to drive lower emissions food production in New Zealand and seek that the Emissions Reduction Plan includes policies that support expansion of horticulture which produces healthy, low emissions food.

# Waste sector

HortNZ seek that the Emissions Reduction Plan promote greater commercial composting to facilitate the bioeconomy.

# **Forestry sector**

We seek that options are explored to ensure a supply of wood waste as biomass, as a means of helping to supply alternative fuels for transition.

It is also important to ensure there is a linkage with planning and resource management to ensure that forestry is appropriately located, in terms of preserving highly productive land for food production.

# HortNZ's Role

# **Background to HortNZ**

HortNZ represents the interests of 6000 commercial fruit and vegetable growers in New Zealand, who grow around 100 different crop types and employ over 60,000 workers.

There is approximately 120,000 hectares of horticultural land in New Zealand - approximately 80,000 ha of this is fruit and vegetables. The remaining 40,000 ha is primarily made up of wine grapes and hops, which HortNZ does not represent.

It is not just the economic benefits associated with horticultural production that are important. The rural economy supports rural communities and rural production defines much of the rural landscape. Food production values provide a platform for long term sustainability of communities, through the provision of food security.

HortNZ's purpose is to create an enduring environment where growers prosper. This is done through enabling, promoting and advocating for growers in New Zealand.



Industry value \$6.39bn Total exports \$4.23bn Total domestic \$2.16bn

# Submission

# 1. Horticulture in New Zealand

Horticulture is a diverse industry - from fruit orchards to outdoor vegetable cropping rotations (including production for fresh and processed vegetables), through to covered crop greenhouses.

#### <u>Fruit</u>

Collectively, fruit exports make up approximately 80% of the (fruit) industry value; the remainder is domestic. New Zealand exported 962,500 tonnes of fresh fruit in 2019. Fresh fruit exports from New Zealand have been experiencing growth; for example, exports grew in value by \$54 million from 2018 to 2019.<sup>1</sup> The most predominant export crops (by value) are kiwifruit, apples, avocados and cherries.

Some fruit crops are predominately grown for the domestic market, e.g., citrus, feijoa, nectarines, peaches and plums.

#### **Vegetables**

The majority (80%) of fresh vegetables are grown for the domestic market.<sup>2</sup> New Zealand's vegetable-growing regions supply markets at different times of the year to provide a sustainable, year-round supply of produce for New Zealand.

Growing of vegetables for domestic supply is also integrated with vegetables grown for export in crop rotations, for practical (soil health) and economic resilience reasons.

New Zealand exported 569,800 tonnes of vegetables in 2020. The most predominant fresh vegetable export crops (by value) were onion, squash and potatoes. The most predominant process vegetable export crops (by value) are potatoes, peas, sweetcorn and beans.<sup>3</sup>

#### Greenhouse growing systems

Greenhouses are a highly efficient food production system, optimising the use of land, water, and nutrients. In New Zealand there is estimated to be 310 hectares of greenhouse vegetable growing<sup>4</sup>, dispersed throughout New Zealand (although predominantly in the upper North Island).

Most vegetables grown in greenhouses in New Zealand are for domestic consumption; the main export crops are capsicums (~35% of the crop) and tomatoes (~10% of crop). This growing system is an integral part of New Zealand's food system, enabling New Zealanders to access freshly grown vegetables from a

<sup>&</sup>lt;sup>1</sup> Freshfacts, 2019. <u>https://www.freshfacts.co.nz/files/freshfacts-2019.pdf</u>

<sup>&</sup>lt;sup>2</sup> For example, <u>KPMG. (2017). New Zealand domestic vegetable production: the growing story</u>. found that for the ten 'staple' vegetables of the 1,133,800 tonnes produced in New Zealand in 2016, 242,400 tonnes (or 21%) was exported and in the same year 1,200 tonnes of vegetables were imported.

<sup>&</sup>lt;sup>3</sup> Freshfacts, 2020. <u>https://www.freshfacts.co.nz/files/freshfacts-2020.pdf</u>

<sup>&</sup>lt;sup>4</sup> Figure from greenhouse industry decarbonisation plan work.

local supplier throughout the year; provides resilience within the domestic food system; and is important for risk management at a national level.

# 2. High-level themes

#### 2.1. Food security

Food security is a nationally important issue which needs to be addressed at a policy level; it is integral to human health. While New Zealand is a net food exporter, New Zealand does experience food insecurity - many New Zealanders live in food insecurity. A 2019 Ministry of Health study analysed household food insecurity among children in New Zealand estimated that 174,000 (19%) of all children in New Zealand live in food-insecure households.<sup>5</sup>

New Zealand's existing food production systems are coming under increased pressure from population growth (and competing land use demands reducing availability of highly productive land), climate change, water concerns, ETS costs and the cost of energy, and the need to improve environmental outcomes. There are societal and health costs to increases to the prices of vegetables in New Zealand and a decline in availability.

#### Health costs of increase in vegetable prices

Otago University has recently modelled the potential health impacts of increased vegetable prices. This study found that using the health costs of an increase in vegetable prices of 43 - 58 percent, (Deloitte, 2018) would be a loss of 58,300 - 72,800 Quality Adjusted Life Years and health costs of \$490 -\$610 million across the population.<sup>6</sup>

HortNZ seeks that the ERP is cognisant of food security - specifically, we see a risk in respect of greenhouse growing systems and transport (both of which are exposed to ETS costs).

#### 2.2. Highly productive land

For future generations, it is critical that Highly Productive Land (HPL) is protected and its value for current and future generations for food production and enable its use for food production recognised.

#### 2.3. Climate change adaption and mitigation

Diversification to horticulture presents an opportunity to reduce emissions while increasing food production. In New Zealand there is 1,000,000 ha of land that could potentially be converted to horticulture. If this land was converted to horticulture it would be as effective at reducing New Zealand's agricultural emissions as a methane vaccine.<sup>7</sup>

The ERP needs to promote opportunities for land use change that supports New Zealand in moving towards a low-emissions economy, an opportunity identified in

<sup>&</sup>lt;sup>5</sup> Ministry of Health. (2019). Household food insecurity among children, New Zealand Health Survey

<sup>&</sup>lt;sup>6</sup> Cleghorn, C. 2020: The health and health system cost impacts of increasing vegetables prices over time, University of Otago

<sup>&</sup>lt;sup>7</sup> BERG. (2018). The report of the biological emissions reference group. <u>https://www.mpi.govt.nz/dmsdocument/32125/direct</u>

the Climate Change Commission's advice (*Ināia tonu nei: a low emissions future for Aotearoa*).

New Zealand should also seek to retain the skills and infrastructure (highly skilled growers of crops, science capability, transport, cool storage, packhouse infrastructure) to feed itself vegetables, as well as the highly productive land. The New Zealand horticulture industry is diverse, highly skilled and innovative, and transitioning to a low carbon world will present many opportunities for the sector.

# **Preliminary sections**

# 3. Meeting the net-zero challenge

# 3.1. Guiding principles

We agree that the Emissions Reduction Plan should be guided by a set of principles.

HortNZ supported the principles that the Climate Change Commission established to underpin decisions on the transition to low emissions.

We consider that there are some gaps that exist in the proposed principles in the ERP discussion document (Table 5), particular in regard to:

- Providing high-level direction on the need to focus on reducing emissions as a priority (and then building a long-term carbon sink for residual emissions).
- The need to create options (different ways, tools, etc. to reduce emissions) through the EPR as a way of managing risk.
- Ensuring the transition makes New Zealand more resilient for the future (and for example, how we will produce food).
- Recognition that the ERP should where possible, avoid unnecessary costs through the transition.

We also consider that there is a need to protect New Zealand's food security and resilience of food production - as an important social and human health value.

These principles (investing in reducing New Zealand's emissions, while improving our resilience and protecting our food security) are particularly important for sectors such as the greenhouse growing sector, who rely on heat for production and need support to transition, so that we can continue to grow this food (with reduced emissions) in New Zealand and reduce the risk of carbon leakage that may result if this production were to be substituted with imports due to carbon pricing.

#### Outcome sought in the ERP:

Add new principles:

- Focus on decarbonising New Zealand's economy and prioritise gross emissions reductions
- Create options for transition that increase resilience to climate change
- Avoid contributing to global emissions through carbon leakage

Add to 'Environmental and social benefits beyond emissions reductions', a specific bullet point that addresses the need to consider and protect New Zealand's food security and resilience of food production.

Add to 'A clear, ambitious and affordable path', the following bullet point: "Avoid unnecessary costs".

# 3.2. Additional comments

#### 3.2.1. LINE OF SIGHT TO FUTURE EMISSIONS BUDGETS

We consider it important to have a line of sight to future emissions budgets, and the investment that is needed now that will create longer-term benefits to enable us to meet future budgets.

#### 3.2.2. ENABLING INVESTMENT

Mechanisms that support and enable investment (both public and private) for transition are important.

Some barriers we are aware of with current funding structures are:

- The level of support is often 'out-of-reach' for smaller growers, due to the scale thresholds of funding, administrative requirements, and the need to employ professionals to design bespoke solutions due to the wide variation in needs and circumstances.
- Funding to support capital investment for already proved technologies is limited, however even when the technology is established there are still barriers to widespread commercial uptake (e.g., regional supply issues) particularly as there is no 'one-size-fits-all' energy solution for growers.

There are also additional measures that are needed to 'fill the gap' in the transition period - as discussed in more detail in section 7 with regard to the greenhouse growing sector.

Key barriers that could be removed to support decarbonisation include:

- improving long term access to, and supply of, renewable energy options including biomass and electricity;
- Make decentralised electricity generation a more attractive option for rural businesses that cannot easily access national grid electricity at the levels required;
- Encourage and support local renewable/low emission energy "hubs" that include food production, industry and possibly residential housing; investigate and eliminate regulatory barriers to renewable/low carbon energy update; fund energy assessments and decarbonisation plans for businesses at all scales.

We agree that avoiding stranded assets is a vital component of mitigating the risks. Stranded assets are likely to occur if costs rise faster than growers can transition. Assets that could be stranded include glasshouses, packhouses, and storage facilities.

# 4. Making an equitable transition

HortNZ supports the development of an Equitable Transitions Strategy - we consider domestic food security to be a critical consideration as part of this.

We support the need to help shape the workforce for a low-emissions future and supporting business to transition.

#### Outcome sought in the ERP:

Include as an objective/focus of the Equitable Transition Strategy, the need to be cognisant of impacts on food security (and the social impacts which are often unequally distributed).

# 5. Aligning systems and tools

## 5.1. Government accountability and coordination

HortNZ supports the need for coordinated work programmes across Government - not only will this be essential for aligning action but will also be more efficient. This is important to consider when consulting on proposals - linkages within and between work programmes should be clear.

# 5.2. Funding and financing

HortNZ agrees that access to funding is an important part of transition - HortNZ proposes an alternative approach is taken to funding/ supporting transition for the greenhouse sector - this is set out in Section 7 below.

# 5.3. Emissions Pricing

The ERP discussion document notes that a higher emissions price is needed. While it is inherently the intent of the ETS that the price of carbon will increase to drive transition - the glasshouse sector is at risk of becoming economically unviable due to ETS costs. If growers no longer produce these crops in NZ, this will result in less variety of vegetables available to NZ consumers, and substitution with imported products. This is discussed in more detail in section 7 below.

#### 5.3.1. RECOGNITION OF FOOD SECURITY IN CLIMATE POLICY & PRICING

A high ETS price will increase the cost of fresh fruit and vegetables and result in reduced food variety for New Zealanders. A high ETS price may also make New Zealand horticultural products less competitive internationally.

The approach to allocation for eligible industrial activities (industrial allocation) and the corresponding level of assistance needs to reflect the risks to food security in the transition period.

Industrial allocation is not currently designed to protect these values. This was discussed in HortNZ, VegetablesNZ and TomatoesNZ's recent submission on the 'Reforming industrial allocation in the New Zealand Emissions Trading Scheme' discussion document.<sup>8</sup> Our primary subjection point was that the industrial allocation should be reviewed to include wider considerations that support New Zealand's progress towards meeting climate targets, while also safeguarding food security, and align with supporting the sector to transition to lower-emissions fuels.

#### Outcome sought in the ERP:

We seek food security as an explicit consideration in climate policy assistance, including investment and free allocation. Specific considerations could include:

- Prioritising food security in the redesign of industrial allocation
- Include a criteria relating to food production and domestic food security (i.e supporting these sectors to transition to maintain and/or enhance food security) in contestable funding to support transition projects.

<sup>&</sup>lt;sup>8</sup> <u>https://www.hortnz.co.nz/assets/Environment/National-Env-Policy/Climate-Change/HortNZ-submission-on-ETS-IA-review-17-Sept-2021.pdf</u>

We seek policy support for the transition to a low carbon economy without increasing food costs so that New Zealanders can transition to eating healthy lower emissions food.

# 5.4. Planning

We agree that the reform of the RMA (resulting in the Natural and Built Environment Act, Strategic Planning Act, and Climate Adaptation Act) presents opportunities for alignment with climate mitigation and adaptation.

- HortNZ supports the NBA promoting, as an Environmental Outcome, reduction in greenhouse gas emissions;
  - o It is important to enable land use change to horticulture,
  - There is also a need to ensure the resource management framework is appropriate in terms of enabling the supply of low emissions fuels.
- There must be a clear approach to the strategy of reducing emissions, in terms of areas which overlap with the NZ ETS.
- With respect to urban form, we support intensification from the perspective of also being a tool for protecting highly productive land from sprawling urban development.

There are also planning linkages with forestry and land use change that might be driven by mechanisms such as carbon pricing; it is important to retain highly productive land (a scare resource) for food production.

#### Outcome sought in the ERP:

We seek stronger links between greenhouse gas emissions and resource management legislation - that is aligned with a clear strategy.

# 5.5. Research, science and innovation

Research, science and innovation will play an important role in supporting transition.

Science can help growers transition to using different fuel types or more energy efficient systems which requires new skills and knowledge. Science can also help to develop new cropping systems and varieties that are more climate resilient.

Research can also support the transition to low emissions land uses (e.g., horticulture), including research into new products/varieties, robotic technology and new generation orchard design.

# 5.6. Behaviour change

We make the following comments, in terms of enabling behaviour change:

- Aligning climate change and greenhouse gas requirements (e.g reporting) with the multitude of other areas, such as environmental, labour etc. so that it is clear what growers need to do and the approach is efficient. Industry assurance programmes (such as GLOBALG.A. P and NZGAP in the horticulture sector) are an important vehicle in this respect.
- The need to support transition with expertise from behaviour change experts particularly, the need to focus on empowering and enabling businesses (with a

focus on positive change), rather than focusing too heavily on regulation that tends to be more negatively framed.

- Work in the area of showing the 'how' including information about options for transition (and how those look economically) and showcasing businesses who have made positive changes.
- Compliance costs needs to align with scale and impact, it is otherwise inefficient and could limit opportunities for positive change.
- Education and behaviour change need to also occur on the consumer side (e.g., buying 'imperfect' produce assists in reducing food waste but is consumer, rather than grower driven).
- Long-term investment certification is important to enable transition.

#### 5.7. Move to a circular and bioeconomy

HortNZ supports initiatives to support the development of the bioeconomy and move towards a more circular economy. We make more specific comments on this in section 9 (Waste).

We support in the ERP discussion document, initiatives to:

- Develop further science and innovation to support the move to a circular economy with a thriving bioeconomy.
- Accelerating the uptake of bioenergy.

We would add to that, the need to explore the opportunity for 'energy hubs' (this is touched on below in Section 7.1).

# Transitioning by key sectors

# 6. TRANSPORT

For the horticulture sector, on-farm vehicles, including light commercial vehicles (e.g., utes) and machinery for cultivation and harvest are important. Alternatives are available in some areas, but not across the board.

Beyond the orchard gate, trucks are frequently used to transport fruit and vegetables to New Zealand consumers or ports. Some growers have their own truck fleets.

The sector is particularly reliant on trucks as a mode of transport between the farm and packhouse and/or processing facility.

Due to the distributed nature of horticulture and the perishability of fresh product - this creates limitations around the use of rail and coastal shipping (particularly for domestic distribution). However, there are opportunities for less perishable products, processed products (e.g., frozen, canned, juiced) and within or between main centres and/or areas where there are clusters of growing.

# 6.1. Decarbonising heavy transport and freight

The ERP discussion document proposed, for freight transport, a 25% reduction in emissions by 2035.

It is important that this is supported by investment into developing commercially viable options, including:

- Where the technology is available there needs to be a focus on making it affordable/accessible.
- Investment in technology and subsidisation of options before they become fully economically viable to drive critical mass.

We support the development of a National Freight and Supply Chain Strategy - this should take into consideration specific requirements and considerations of the horticulture sector, and the different roles trucking, rail and coastal shipping play (and/or could play) in efficient transport of produce.

There could also be strategic planning opportunities which support mode shift, where the location is appropriate - e.g. A rail hub near Pukekohe connecting to Auckland and Tauranga Ports would significantly reduce road freight movements through Auckland.

# 6.2. Congestion pricing

We seek clarity on the scope of options relating to congestion pricing (and whether this includes freight vehicles). Freight is different to light vehicles e.g., freight transport has limited options for alternative modes, freight for fresh produce cannot choose when to travel to avoid peak rates.

There also needs to be clear objectives, not just revenue raising. Revenue should be limited to supporting alternative modes of transport.

# 7. ENERGY AND INDUSTRY

The production of fruit and vegetables requires reliable and economic energy supply. The demand for energy depends on growing systems (e.g., greater in heated greenhouse growing systems) and different stages in the supply chain.

Many growers have energy efficient goals and strategies for their businesses.

Example initiatives of growers reducing their energy use include the use of energy efficient machinery and equipment (including irrigation infrastructure), and efficient design of buildings (such as packhouses).

Some growers are taking the opportunity to generate solar energy off their roofs. This currently is an economically viable method of reducing electricity and diesel costs and reducing emissions.<sup>9</sup>

In regard to the Energy and Industry chapter, HortNZ seek that the ERP include clear direction on investment and a strategy to enable transition - particularly there is a need to provide alternative support pathways for greenhouses, so we can continue to grow these crops in New Zealand.

# 7.1. A New Zealand Energy Strategy

HortNZ support the development of a New Zealand Energy Strategy. We touch in areas we see as priority areas below.

Security of supply (particularly availability of biomass and electricity)

A key challenge for the greenhouse sector (aside from the capital cost) is the lack of security of supply for alternative fuel sources to enable an investment to be made in transitioning. This needs to be a priority area in the energy strategy – particularly for biomass and electricity options, which has been the focus. There also needs to be resilience in supply – e.g. we are aware of a situation where biomass was unavailable due to flooding.

These areas require clear signalling and investment, in order to enable transition and certainty for growers.

Distributed generation

There is potential for expansion of solar generation within horticultural businesses and an opportunity for growers to feed the grid at times of high demand from their solar energy and draw-down energy from the grid to charge batteries at times of lower demand.

Energy hub options to deliver co-benefits across industries

There could be an opportunity to co-locate production with urban centres and co-locate heat and power production (e.g., through small and medium scale geothermal power plants /biogas) to serve markets. The hubs opportunity is limited in New Zealand, but there may be some strategic locations where investment in energy hubs is viable.

We seek that strategic planning is undertaken to understand and enable these opportunities further.

<sup>&</sup>lt;sup>9</sup> https://www.choiceenergy.co.nz/customers/agriculture/jivan-produce

#### Outcome sought in the ERP:

Progress with the development of a New Zealand Energy Strategy, in consultation with stakeholders. We consider the Energy Strategy needs to include:

#### **Biomass supply**

- Include detailed modelling of biomass supply (and supply and demand across sectors) and assessing the ability of the regional biomass supply out to 2035 and 2050 that could better inform the industry of the prospects of products.
- Include a strategy for ensuring there is a supply of biomass that meets the needs of the transition.

#### **Electricity**

- Analysis of the rate/timing of the increase in renewable energy regionally and the ability for increased capacity and infrastructure to be delivered through the network and demand for electricity demands (e.g., alongside more EVs, etc.) will be met.
- Have a strategy for the generation and distribution infrastructure so there is certainty over where electricity will be an option as an alternative energy source for users such as greenhouses.

#### Other opportunities

- Consider opportunities that might exist for greater energy generation as part of a distributed network within farms and energy hubs.
- Consider opportunities to develop cross-sector energy hubs in strategic location (for example, geothermal energy).
- Not preclude alternative fuels or technologies which might already exist, be in development, or provide options in the future, as transition will not be 'one-size-fits-all'.

# 7.2. Phasing out fossil gas while maintaining consumer wellbeing and security of supply

We agree that there needs to be careful management to maintain security of supply until transition is possible. Growers have faced disruption as a result of the gas supply market. This creates an additional pressure on growers at a time when alternatives are not necessarily available to fill this gap (particularly in the short-term).

# 7.3. Decarbonising the greenhouse growing sector

Heat and carbon dioxide enrichment are important for the viability of greenhouse growing.<sup>10</sup> ETS costs are having a big impact on growers. Growers have been experiencing



<sup>&</sup>lt;sup>10</sup> Refer to submission on 'Review of Industrial Allocation in the NZ ETS' for further explanation: <u>https://www.hortnz.co.nz/assets/Environment/National-Env-Policy/Climate-Change/HortNZ-submission-on-ETS-IA-review-17-Sept-2021.pdf</u>

substantial cost increases, due to rapidly rising ETS costs - for example the NZU price has doubled, reaching \$65 (on the secondary market) in the last year.

#### 7.3.1. DECARBONISATION PLAN AND INVESTMENT REQUIRED

The sector is committed to transitioning to a lower emission economy - as demonstrated by partnering with EECA on developing an Industry Decarbonisation Plan for the sector. This will be available shortly.

Analysis as part of the decarbonisation plan estimates that the greenhouse vegetable growing sector (as of 2020) had 211,000 tCO2 emissions per year: 59% from the use of gas (used to heat 66% of glasshouse area), 31% from the use of coal (used to heat 15% of the glasshouse area), the remaining 10% from other hydrocarbon sources. The estimated proportional of emissions and capital cost of transition is summarised below.<sup>11</sup>

| Size         |        | Emissions %                | Estimated cost of transition (CAPEX)                                 |
|--------------|--------|----------------------------|--|
| Large        | ≥5 ha  | 84% of sector<br>emissions | Estimated cost of \$200million to transition by 2040                 |
| Medium       | 1-4 ha | 10% of sector<br>emissions | Estimated cost of \$27 million to transition by 2041                 |
| Small        | <1ha   | 6% of sector<br>emissions  | Estimated cost of \$6 million to transition by 2042                  |
| Total Sector |        | 211,000 tCO2               | Estimated cost of approximately \$233 million to transition by 2042. |

#### 7.3.2. CHALLENGES TO TRANSITION AND THE RISKS OF THE CURRENT APPROACH

The Decarbonisation Plan is an important step towards a lower emission future - however challenges remain (particularly in the short-term) for growers.

The key barriers or challenges for transition include economic reasons (transition is very capital intensive, and operating costs are high relative to grower profitability), and energy security limitations (for biomass and electricity in particular). Some technology – e.g. electric heat pumps – have yet to be successfully trialled at scale. Carbon dioxide captured from natural gas combustion and injected into greenhouses to increase yield is also an important factor in terms of fuel choice and the economics of transition.

Over the period from now (2021) to 2040:

- The Level of Assistance (LA) for horticultural growers eligible for industrial allocation (as moderately emissions intensive trade exposed businesses<sup>12</sup>) will gradually be phased out - i.e. decreasing progressively from 0.6 now to 0.4 in 2040 (and virtually zero by 2050).
- Other growers (e.g., of lettuce, herbs, leafy greens, chillies, eggplants) continue to face the full ETS costs, with no industrial allocation.

<sup>&</sup>lt;sup>11</sup> Covered Crops Decarbonisation Plan. Draft Report Version 1.0a

<sup>&</sup>lt;sup>12</sup> Fresh tomatoes, fresh cucumbers, and fresh capsicums.

- The ETS cost will continue to rise. Growers have been experiencing substantial cost increases, due to rapidly rising ETS costs for example the NZU price has doubled, reaching \$65 (on the secondary market) in the last year.
- The cost and availability of low-emission alternative fuels is uncertain or limited in many areas.

These factors limit the ability of growers to transition. There is considerable risk that some will go out of business due to limited financial, technical and physical resources to rapidly invest in transition. The ability to switch to lower emissions fuels may still be a number of years away, depending on the alternative fuels available to growers in their location.

Attached as **Appendix A (Covered Crops Decarbonisation - Problem definition for transition)** is an economic analysis undertaken by NZIER, defining the challenge of transition for the covered crop sector, particularly the risk that the price of carbon poses to the covered crop industry and the ability to transition:

- Transition requires investment the expected increase in carbon emission costs will quickly push the industry 'to or below' breakeven profit levels making it difficult for the industry to attract investment to replace existing assets let alone switch to lower emission technology.
- The report estimates that growers without free allocation will be exposed to carbon costs above the current estimated maximum profit of the industry by 2023, and for growers who can access free allocation by 2028.

The current ETS settings have driven energy efficiency, but growers do not have the capital to invest in decarbonisation.

There is a significant risk that the greenhouse sector will be significantly downsized due to the rising costs becoming uneconomic before transition to low emissions alternative fuels is possible.

If it is desirable to retain this food production in New Zealand (which we consider it is for reasons expressed below), a different approach is needed to support the transition that will reduce New Zealand's emissions while also enabling continued food production.

#### 7.3.3. PROPOSED APPROACH TO ENABLE TRANSITION FOR A RESILIENT FOOD SUPPLY

NZIER's analysis (**Appendix A**) estimates that the value of free allocation units for the sector over the period 2023 to 2040 will be approximately \$216 million – a net present value of approximately \$110 million. The report concludes that options to capitalise allocation could support covered crop growers to transition.

We seek to redesign the assistance provided for within Section 83 of the Climate Change Response Act (CCRA), to provide the ability for growers to anticipate and capitalise future free allocation. Redesign of the assistance provided for under Section 83 and 84 of the CCRA in a way that has a comparable cost to growers and the Government over the next 20 years will result in faster decarbonisation of the sector while maintaining food security for New Zealanders. There is urgency associated with the work because the economics of greenhouse growing in New Zealand is under considerable pressure due to the rising ETS price.

#### Outcome sought in the ERP:

We seek an agreement for the greenhouse sector and government to jointly undertake economic and policy analysis to redesign the assistance under CCRA, so the assistance supports capital investment for decarbonisation of the greenhouse sector.

#### 7.3.4. WHY IT MATTERS (AND WHY A BESPOKE APPROACH IS REQUIRED)

A clear strategy and investment approach that supports transition of the greenhouse growing sector is important for a number of reasons, summarised below.

#### <u>Risks to food security</u>

Greenhouse growers are producing healthy, fresh (perishable) fruit and vegetables, enabling year-round food supply and security for New Zealanders.

The Paris Agreement speaks to a 'fundamental priority of safeguarding food security' and action in a manner that does not threaten food production. It is important that New Zealand retains the ability to provide for our own fruit and vegetables - in terms of availability, but also affordability.

Growers are price takers and need to produce year-round for economic viability. For the majority of crops grown in greenhouses, outdoor growing has been overtaken by greenhouse vegetable production due to higher yields, better quality, and improved efficiency of water, nutrients and other input use. Increased costs of production could impact ability to supply domestic market.<sup>13</sup>

Domestic consumption of vegetables is sensitive to price<sup>14</sup>. Some of the costs of reducing emissions that will be borne by the horticulture sector (via the ETS or otherwise) will either be passed on to consumers or result in significantly reduced domestic supply.

#### Resilience of New Zealand's food system and the future of food

Greenhouse growing is an efficient growing system that also provides resilience in domestic food supply and is resilient in a changing and more volatile climate.

In respect to our domestic food system, the greenhouse industry plays an important role in evening out market supply issues in shoulder and off seasons. This is particularly important when there are adverse weather events that impact on the few areas in the country where there is winter production of certain vegetables.

Greenhouse systems are more resilient to the challenges of climate change. Global trends suggest that covered cropping will have an increasingly important role to play in feeding people. An increase in covered cropping will be essential to adapt the food production system to the changing, more volatile world climate while still producing enough food in a way that also uses less water and nutrients and mitigates the risks associated with unpredictable climatic events. A 2019 Intergovernmental Panel on Climate Change report into land use stated, "*The stability of food supply is projected to decrease as the magnitude* 

<sup>&</sup>lt;sup>13</sup> Refer to submission on 'Review of Industrial Allocation in the NZ ETS' for further explanation: <u>https://www.hortnz.co.nz/assets/Environment/National-Env-Policy/Climate-Change/HortNZ-submission-on-ETS-IA-review-17-Sept-2021.pdf</u>

<sup>&</sup>lt;sup>14</sup> Rush, E., Savila, F., Jalili-Moghaddam, S., & Amoah, I. (2018). Vegetables: New Zealand Children Are Not Eating Enough. Front. Nutr. <u>https://www.frontiersin.org/articles/10.3389/fnut.2018.00134/full</u>

and frequency of extreme weather events that disrupt food chains increases".<sup>15</sup> Covered cropping can reliably deliver high yields of quality produce using less land and water.

#### Risk of climate leakage

There is a risk of carbon leakage from the loss of greenhouse production. Countries that might fill that gap (notably Australia) through imports are very unlikely to face the same carbon charges that our growers face; they may pay a different price; or they may produce with much higher emissions than NZ growers.

For example, 302,186kgs of fresh tomatoes were imported from Australia during this winter (July - September) at an average CIF price of \$5.63/kg. New Zealand grown produce for the same period averaged a retail price of \$15.24/kg, so even with a retail mark-up and other costs the imported tomatoes are substantially lower in cost.

Imports are sensitive to market changes in New Zealand. For example, import data for tomatoes, capsicum, cucumber and lettuce indicates that imports predominately occur over the winter months when the prices are higher in New Zealand, this coincides with when prices are at their peak.<sup>16</sup>

#### Economic and social implications

The loss of greenhouse growing would mean reduced access to locally grown produce, which is fresher and more readily available from a range of suppliers than imports; biosecurity risks will increase from the imported products; jobs and export income will be lost; and New Zealand's own food security (ability to provide its own fresh vegetables) reduced.

# 7.4. Supporting development and use of low-emissions fuels

We think that there is a role for Government (and the ERP) in facilitating or supporting the d establishment of robust markets for low-emissions fuels supply- whether through policy, investment or some other mechanism. This will help to accelerate the options for transition.



<sup>&</sup>lt;sup>15</sup> IPCC, 2019: Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems

<sup>&</sup>lt;sup>16</sup> Statistics New Zealand Infoshare tool.

# 8. AGRICULTURE

In regard to the agriculture chapter, HortNZ seek that the ERP include direction on:

- He Waka Eke Noa partnership's work in developing settings to drive lower emissions food production in New Zealand.
- Policies that support expansion of horticulture which produces healthy, low emissions food.

## 8.1. He Waka Eke Noa

We support the He Waka Eke Noa partnership between government, the primary sector and iwi/Māori to make progress on climate change mitigation

The He Waka Eke Noa approach acknowledges that a price in isolation cannot drive the systems wide change required to reduce agricultural emissions, and what is needed to achieve change is an integrated approach including farm planning supporting behaviour change.

The farm level response through He Waka eke Noa, will need to be supported by a wider network of changes including investment in research, infrastructure and technology as well as strategic planning and regulation.

#### Outcome sought in the ERP:

Continued support for He Waka Eke Noa, supported by investment in research, infrastructure and technology as well as strategic planning and regulation.

#### 8.2. Supporting lower emissions farming systems

The Climate Change Commission's report to Government, included recommendations to support alternative, lower emissions land uses (refer box below) – this does not appear to have been carried through into the agriculture section of the ERP discussion document.

We consider this should feature in the final ERP - as investment and action now will be required in order to make gains in future emissions budgets.

#### Ināia tonu nei: a low emissions future for Aotearoa

- The demonstration path assumes 2,000 ha of land is converted to horticulture per year from 2025. The Climate Change Commission expects that this could include in future "if barriers such as water availability, labour, supply chains and path to market are addressed."
- A path of less technological change and more behaviour change ('Alternative Pathway A') would require an additional 3,500 ha per year. By 2050 this would see horticulture increase by approximately 100,000 ha.
- "Opening up opportunities for more conversion to lower emissions production systems and land uses, including horticulture" is listed as a critical outcome.
- Policy direction for agriculture includes:

"Support systems and infrastructure for alternative, lower emissions land uses so that there is more potential to convert land to low emissions uses in future. This includes, for example, infrastructure and supply chains for horticulture." To enable horticulture growth to continue and increase, we need investment in the right areas and a regulatory/policy environment that enables the market to respond.

Investment and policy support needs to occur now to enable outcomes to be achieved in the second and third emissions budgets-however, the alternative is to rely on technological solutions that do not yet exist.

This is important both from a perspective of climate change adaptation (adapting to changing climate may bring new opportunities for horticulture), climate change mitigation (through land-use change to a low emissions land use) and importantly, providing New Zealand with options for meeting our targets should other initiatives not proceed at the pace necessary.

It is also important to recognise that transition to horticulture may occur at different scales from incremental changes in mixed farming systems (e.g., addition of, or greater proportion of vegetables in rotation as part of a mixed farming operation), to more wholesale changes of in land use/farming system, and both of these options need to be enabled.

#### Outcome sought in the ERP:

Policy direction and investment (and alignment of policy direction) to support alternative land uses such as horticulture, to realise the potential for our highly productive land, to be economically productive and generate lesser emissions, including in the areas of:

- R&D and Innovation: including research into new products/varieties, robotic technology and new generation orchard design
  - Policy/regulatory settings, including:
    - o Labour policy,
    - Environment policy (ability to access land and water, enable land-use change, resolving Māori rights and interests in water),
    - Food policy.
- Enabling investment: water storage that provides reliable water and community benefits, investment in growing international markets.

# 9. WASTE

## 9.1. Reducing organic waste disposal to landfill

We consider that there is an opportunity to support/promote greater commercial composting to facilitate the bioeconomy. This would provide an alternative pathway for organic waste, rather than going to landfill.

For the horticultural sector, we see two opportunities here:

- A supply chain for alternatives (e.g., compost-type products) to synthetic fertiliser. This could be further supported by research and investment in developing compost that is more of a known variable in respect of nutrients and GHG emissions.
- Supply of biogas and/or biofuels.

#### Outcome sought in the ERP:

• Promote greater commercial composiing to facilitate the bioeconomy - to provide low emission alternative fuels and fertiliser products.

## 9.2. Reducing food waste

HortNZ is also making a submission on the consultation on a new Aotearoa New Zealand Waste Strategy.

We support the objective of reducing food waste – but are mindful that initiatives in this area need to ensure they do not contribute to food insecurity, and that New Zealanders are not inadvertently discouraged from eating "5 plus" a day. From a supply perspective, there is a need for some redundancy in the food system to ensure a reliable and resilient supply of fresh, healthy and reasonably priced food.

# **10. FORESTRY**

An opportunity that should be considered is leveraging regulatory controls to support the development of the biomass supply market, through greater recovery of wood waste from forestry. It is important that there is an efficient fuel market that supports the transition (which relies on the availability of alternative fuels).

Another consideration in respect to forestry in the transition to a low carbon economy is the need to retain highly productive land for food production, now and for future generations - -this is likely to be best managed through resource management legislation (including the Strategic Planning Act and Natural and Built Environment Act that will be replacing the RMA).

#### Outcome sought in the ERP:

The options (and benefits) of regulating the forestry sector, in respect of supply of wood waste as biomass be considered, as a means of helping to supply alternative fuels for transition.

Ensure there is a linkage with planning and resource management (e.g. SPA and NBA legislation) to ensure that new forestry is appropriately located, in terms of the highly productive land resource.

Appendix A: Covered Crops Decarbonisation: Problem definition for transition, NZIER (November 2021)





# **Covered crops decarbonisation**

# **Problem definition for transition**

NZIER report to Horticulture New Zealand

26 November 2021

#### About NZIER

NZIER is a specialist consulting firm that uses applied economic research and analysis to provide a wide range of strategic advice.

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#### **Key points**

#### Situation faced by the covered crops industry

Recent and forecast increases in the price of carbon (NZU) pose a serious challenge to the ability of the covered crops industry to decarbonise and to its long-term financial viability. Energy costs are estimated to be about 15 to 20 percent of covered crop grower revenue.

Recent increases in carbon prices to above \$60 per NZU will increase the gross cost of emissions as a share of the energy cost of covered crop growing from 20 to 40 percent. Projected increase in the price of NZU to \$140 by 2030 will lift gross emission costs from 40 percent of current energy costs to approximately 100 percent of energy costs.

Export intensive trade exposed (EITE) covered crop growers – which include capsicum, cucumber and tomato growers are temporarily and partially insulated from the increase in gross emission cost by the allocation of free NZU up to 60 percent of the emissions by the sector. However, the allocation of emissions will be reduced annually by 1 percent per year from 2021 to 2030, 2 percent per year from 2031 to 2040 and 3 percent per year after 2040. Growers receiving free allocations are expected to see an almost four-fold increase in the cost of their emissions by 2030 if their energy use continues at current levels.

#### Some covered crops growers are fully exposed to gross emissions costs

Capsicum, cucumber and tomato growers earned total revenue of about \$213 million in 2020 and account for about 85 percent of the covered vegetable growing industry. Growers of the two other main covered vegetable crops – lettuce and aubergine with combined sales of \$37 million do not receive free allocations and are fully exposed to the projected increase in gross emission cost due to rising carbon prices.

To avoid these potential increases covered crop growers need to improve energy efficiency and switch to low emission fuels (biomass, biogas and to a lesser extent electricity). This switching requires capital investment in heating technology that uses low emission fuels while managing uncertainty about the availability of low emission fuels let alone their likely cost.

#### Decarbonisation requires significant capital investment

DETA Consulting has modelled a decarbonisation pathway for the covered vegetable growing industry that indicates a capital investment of \$233.6 million would be required over the period 2023 to 2040 to reduce emissions from 211,000 t CO<sub>2</sub>e in 2020 to 6,072 t CO<sub>2</sub>e by 2042. Most of the investment and the reduction in emission occurs after 2035 leaving growers exposed to rising emissions cost in the short term.

The scale of capital investment required is large in comparison to the investment in existing assets and would be in addition to the replacement of these assets. Growers tend to be price takers. Recent industry analysis by NZIER suggested that industry profit was about 0 to 5 percent of revenue before the recent increase in carbon prices (implying a maximum industry-wide profit of about \$12 million per year).

#### The current free allocation process does not allow growers to adjust

The estimated value of free allocation units over the period 2023 to 2040 is about \$216 million. This free allocation is a cost to the Crown. It provides growers with a diminishing level of assistance to meet their current emissions costs but does not assist them to make a transition to low emissions methods of growing vegetables.

An option to capitalise part of the free allocation could contribute to EITE covered crop grower implementation of the lower<sup>1</sup> cost emission projects in the DETA consulting path (2023 and 2026) and develop a strategy for the next stage of the decarbonisation plan.

<sup>1</sup> 'Lower cost' is intended lower capital cost per tonne of CO<sub>2</sub> emission reduction.

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# **1 Projected Industry gross emission costs**

#### 1.1 Scope

Horticulture New Zealand has asked us to:

- Problem definition: short description of the financial aspects of transition challenges which would focus on the timing mismatch between:
  - The need for capital (and viable alternative fuel supplies) in the short to medium term to make the transition away from fossil fuels
  - The expected increase in the value of NZU allocated to the industry in the medium term.
- Two illustrative scenarios for the transition of the covered crops industry away from fossil fuels if the expected value of the NZU allocation could be exchanged for capital funding.

#### **1.2** Emissions by EITE and domestic growers

Our starting points for the analysis of the likely change in gross emission costs are the following:

- Estimated total CO<sub>2</sub>e emissions of 211,000 tonnes in 2020 by DETA Consulting<sup>2</sup>. This is roughly consistent with the estimate of total emissions from the indoor cropping based on EECA data in Table 4 as the EECA data covers flowers and nurseries as well as vegetables.
- Reported free allocation of 107 243 NZU in 2019<sup>3</sup>. We have assumed that this free allocation represented 60 percent of the emissions by growers that received a free allocation which implied total emissions by these growers of 178,378 t CO<sub>2</sub>e<sup>4</sup>. This suggests growers with free allocations account for just under 85 percent of the emissions from the sector.
- Projected carbon prices in the Climate Change Commission Final Advice June 2021<sup>5</sup>.

#### **1.3** Implications for the problem definition

Table 1 shows the forecast emissions and cost for growers with (EITE) and without (non-EITE) free allocations over the period if their emissions remained unchanged from 2020 levels.

In the absence of better data, we use this 85 percent share of emissions with free NZU allocation as an estimate of the share of grower revenue receiving free NZU allocation. On this basis the \$212 million of capsicum, cucumber and tomato grower revenue is supported

<sup>&</sup>lt;sup>2</sup> 'Covered Cropping Sector Decarbonisation Pathway Update

<sup>&</sup>lt;sup>3</sup> SUBMISSION ON, Reforming industrial allocation in the New Zealand Emissions Trading Scheme, 17 September 2021, Horticulture New Zealand, page 16

<sup>&</sup>lt;sup>4</sup> The allocation comprised 29,466 NZU to 10 capsicum growers, 27,940 NZU to 9 cucumber growers and 49,837 NZU to 20 tomato growers.

<sup>&</sup>lt;sup>5</sup> Scenarios dataset for the Commission's 2021 Final Advice (output from ENZ model), Demonstration path

by free NZU allocation with the \$37 million of lettuce and eggplant grower revenue exposed to the full effect of rising carbon prices.

The key points to note are:

- The current approach to free allocation creates a two-speed adjustment in the sector. Growers without free allocations will be exposed to carbon costs above 5 percent of their gross revenue by 2023 – above the current estimated maximum profit of the industry. Growers with free allocation will be exposed to carbon costs above 5 percent of their revenue by 2028.
- The expected increase in carbon emission costs will quickly push the industry 'to or below' breakeven profit levels making it difficult for the industry to attract investment to replace existing assets let alone switch to lower emission technology.
#### Table 1 Projected emission cost without decarbonisation

Value of free allocation and cost to growers in \$ million

| Year | NZU price<br>(\$/t CO2e) | EITE                            |                    |       | Non-EITE           | EITE and non-EITE  |
|------|--------------------------|---------------------------------|--------------------|-------|--------------------|--------------------|
|      |                          | Free<br>allocation <sup>1</sup> | Cost to<br>growers | Total | Cost to<br>growers | Cost to<br>growers |
| 2020 | 30.00                    | 3.22                            | 2.14               | 5.36  | 0.97               | 3.11               |
| 2021 | 40.84                    | 4.31                            | 2.99               | 7.30  | 1.32               | 4.31               |
| 2022 | 51.68                    | 5.36                            | 3.88               | 9.24  | 1.67               | 5.55               |
| 2023 | 62.53                    | 6.37                            | 4.81               | 11.18 | 2.02               | 6.82               |
| 2024 | 73.37                    | 7.34                            | 5.77               | 13.11 | 2.37               | 8.14               |
| 2025 | 84.21                    | 8.28                            | 6.77               | 15.05 | 2.72               | 9.49               |
| 2026 | 95.05                    | 9.17                            | 7.82               | 16.99 | 3.07               | 10.88              |
| 2027 | 105.89                   | 10.03                           | 8.90               | 18.93 | 3.42               | 12.31              |
| 2028 | 116.74                   | 10.85                           | 10.02              | 20.87 | 3.77               | 13.78              |
| 2029 | 127.58                   | 11.63                           | 11.17              | 22.80 | 4.12               | 15.29              |
| 2030 | 138.42                   | 12.12                           | 12.62              | 24.74 | 4.47               | 17.08              |
| 2031 | 142.57                   | 11.98                           | 13.51              | 25.48 | 4.60               | 18.11              |
| 2032 | 146.85                   | 11.81                           | 14.44              | 26.25 | 4.74               | 19.17              |
| 2033 | 151.25                   | 11.63                           | 15.41              | 27.03 | 4.88               | 20.29              |
| 2034 | 155.79                   | 11.42                           | 16.43              | 27.85 | 5.03               | 21.46              |
| 2035 | 160.47                   | 11.19                           | 17.50              | 28.68 | 5.18               | 22.67              |
| 2036 | 165.28                   | 10.93                           | 18.61              | 29.54 | 5.33               | 23.94              |
| 2037 | 170.24                   | 10.65                           | 19.78              | 30.43 | 5.49               | 25.27              |
| 2038 | 175.34                   | 10.34                           | 21.00              | 31.34 | 5.66               | 26.66              |
| 2039 | 180.61                   | 10.01                           | 22.27              | 32.28 | 5.83               | 28.10              |
| 2040 | 186.02                   | 9.64                            | 23.61              | 33.25 | 6.00               | 29.61              |
| 2041 | 191.60                   | 9.25                            | 25.00              | 34.25 | 6.18               | 31.18              |
| 2042 | 197.35                   | 8.82                            | 26.46              | 35.27 | 6.37               | 32.82              |

Note:

1 The free allocation in 2020 is reduced by 1 percentage point per year from 2021 to 2030, 2 percentage points per year from 2031 to 2040 and 3 percentage points per year after 2040.

Source: NZIER

## 2 Potential decarbonisation path

#### 2.1 Decarbonisation path

DETA Consulting has modelled a decarbonisation pathway for the covered vegetable growing industry. The potential problems for the industry in following this pathway are:

- How to meet rising emissions costs over the period
- How to maintain profitability and attract sufficient new investment to fund the pathway.

Table 2 below summarises the capital expenditure and emissions reductions expected from the decarbonisation pathway proposed by DETA Consulting for the industry as a whole – an aggregation of decarbonisation plans for 'large', 'medium' and 'small' glasshouses.

Table 3 estimates the emission cost for growers using the simplifying assumptions that the DETA Consulting decarbonisation pathway is followed and the free allocation of units to EITE growers is reduced as provided for in the current legislation.<sup>6</sup>

#### 2.2 Outlook for transition

Previous analysis by NZIER has highlighted the risk of rapid downsizing of the covered crops industry as the carbon prices increase.<sup>7</sup>

At a carbon price of \$50 per tonne (given current technologies) the covered crops industry will be significantly downsized. Growers will not be able to provide the volume or range they currently do. Most product will be imported.

In this report we estimate that growers without free allocations will be exposed to carbon costs above 5 percent of their gross revenue by 2023 and growers with free allocation will be exposed to carbon costs above 5 percent of their revenue by 2028.

The free allocations provide growers with a diminishing level of assistance to meet annual emissions cost but do not assist them to make a transition to low emissions methods of growing vegetables. While the DETA report identifies a transition pathway to decarbonisation by 2042 it is highly unlikely that growers will be able to fund the necessary investment over that time period.

The net present value of the free allocations over the period 2022 to 2042 is about \$110 million at a discount rate of 6.0 percent. Options to capitalise part of the allocation could contribute to covered crop growers implementation of lower cost emission projects in the DETA consulting path (2023 and 2026) and develop a strategy for the next stage of the decarbonisation process.

<sup>&</sup>lt;sup>6</sup> 'Climate Change Response Act 2002, Public Act 2002 No 40, Date of assent 18 November 2002', 'Version as at 3 November 2021', Section 81 (1a) page162 and Section 81 (2) page 163,

<sup>&</sup>lt;sup>7</sup> 'The potential impact of the Emissions Trading Scheme on covered crops, NZIER report to the Covered Crops industry, March 2020' page iv

# Table 2 Decarbonisation pathwayValue of free allocation and cost to growers in \$ million

| Year  | Capex<br>(\$m) | Emissions<br>(t CO <sub>2</sub> e) | Description   |
|-------|----------------|------------------------------------|---|
| 2020  |                | 211,000                            |   |
| 2021  | 0.0            | 211,000                            |   |
| 2022  | 0.0            | 211,000                            |   |
| 2023  | 9.5            | 183,896                            | Known projects  |
| 2024  | 0.0            | 183,896                            | Efficiency gains <sup>1</sup> large'-   |
| 2025  | 0.0            | 183,896                            |   |
| 2026  | 11.0           | 175,258                            | Screens 'large' and efficiency gains <sup>1</sup> 'medium'                      |
| 2027  | 0.0            | 175,258                            |   |
| 2028  | 3.6            | 173,561                            | Humidity control 'medium', screens 'medium' and efficiency gains $^{1}$ 'small' |
| 2029  | 4.2            | 171,438                            | Buffer tank 'large'   |
| 2030  | 0.0            | 164,771                            |   |
| 2031  | 37.0           | 155,205                            | Humidity control 'large' and buffer tank 'medium'                               |
| 2032  | 0.0            | 155,205                            |   |
| 2033  | 0.0            | 155,205                            |   |
| 2034  | 0.0            | 155,205                            |   |
| 2035  | 11.7           | 151,444                            | Fuel switch to heat pump 'medium' and 'small'                                   |
| 2036  | 9.6            | 141,386                            | Fuel switch to biomass 'medium' and 'small'                                     |
| 2037  | 0.0            | 141,386                            |   |
| 2038  | 68.0           | 136,654                            | Fuel switch to heat pump 'large'  |
| 2039  | 79.0           | 95,950                             |   |
| 2040  | 0.0            | 6,799                              | Fuel switch to biomethane 'large''  |
| 2041  | 0.0            | 6,799                              | Fuel switch to biomethane 'medium'  |
| 2042  | 0.0            | 6,072                              | Fuel switch to biomethane 'small'   |
| Note: |                |                                    |   |

1 No capex required to achieve the efficiency gains

Source: NZIER

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#### Table 3 Projected emission cost with decarbonisation

Value of free allocation and cost to growers in \$ million

| Year | NZU price<br>(\$/t CO2e) | EITE                            |                                 |       | Non-EITE           | EITE and non-EITE  |
|------|--------------------------|---------------------------------|---------------------------------|-------|--------------------|--------------------|
|      |                          | Free<br>allocation <sup>1</sup> | Cost to<br>growers <sup>2</sup> | Total | Cost to<br>growers | Cost to<br>growers |
| 2020 | 3.11                     | 3.22                            | 2.14                            | 5.36  | 0.97               | 6.33               |
| 2021 | 4.31                     | 4.31                            | 2.99                            | 7.30  | 1.32               | 8.62               |
| 2022 | 5.55                     | 5.36                            | 3.88                            | 9.24  | 1.67               | 10.91              |
| 2023 | 6.82                     | 6.37                            | 3.37                            | 9.74  | 1.76               | 11.50              |
| 2024 | 8.14                     | 7.34                            | 4.09                            | 11.43 | 2.06               | 13.49              |
| 2025 | 9.49                     | 8.28                            | 4.84                            | 13.12 | 2.37               | 15.49              |
| 2026 | 10.88                    | 9.17                            | 4.94                            | 14.11 | 2.55               | 16.66              |
| 2027 | 12.31                    | 10.03                           | 5.69                            | 15.72 | 2.84               | 18.56              |
| 2028 | 13.78                    | 10.85                           | 6.31                            | 17.16 | 3.10               | 20.26              |
| 2029 | 15.29                    | 11.63                           | 6.90                            | 18.53 | 3.34               | 21.87              |
| 2030 | 17.08                    | 12.12                           | 7.20                            | 19.32 | 3.49               | 22.81              |
| 2031 | 18.11                    | 11.98                           | 6.77                            | 18.74 | 3.38               | 22.13              |
| 2032 | 19.17                    | 11.81                           | 7.50                            | 19.31 | 3.48               | 22.79              |
| 2033 | 20.29                    | 11.63                           | 8.26                            | 19.89 | 3.59               | 23.48              |
| 2034 | 21.46                    | 11.42                           | 9.07                            | 20.48 | 3.70               | 24.18              |
| 2035 | 22.67                    | 11.19                           | 9.40                            | 20.59 | 3.72               | 24.30              |
| 2036 | 23.94                    | 10.93                           | 8.86                            | 19.80 | 3.57               | 23.37              |
| 2037 | 25.27                    | 10.65                           | 9.74                            | 20.39 | 3.68               | 24.07              |
| 2038 | 26.66                    | 10.34                           | 9.96                            | 20.30 | 3.66               | 23.96              |
| 2039 | 28.10                    | 10.01                           | 4.67                            | 0.00  | 2.65               | 2.65               |
| 2040 | 29.61                    | 9.64                            | -8.57                           | 1.07  | 0.19               | 1.26               |
| 2041 | 31.18                    | 9.25                            | -8.14                           | 1.10  | 0.20               | 1.30               |
| 2042 | 32.82                    | 8.82                            | -7.80                           | 1.02  | 0.18               | 1.20               |

Note:

1 The free allocation in 2020 is reduced by 1 percentage point per year from 2021 to 2030, 2 percentage points per year from 2031 to 2040 and 3 percentage points per year after 2040.

2 After 2040 the free allocation exceeds the emissions by growers which means the value of the free allocation is greater than the cost of the emissions not covered by the free allocation.

Source: NZIER

## Appendix A Estimated energy use and emissions

#### A.1 Energy use and emissions

This report has used two sources of information on the energy use and emissions; industry survey data used extensively in the body of the report and the EECA end use energy database (EEUD) which is the focus of this section. The DETA Consulting report and industry surveys both indicate natural gas is the dominant heating fuel (59 percent from gas for 76 percent of the glasshouse area and 31 percent from coal for 15 percent of glasshouse area) for indoor crops while the EECA EEUD used in this report indicates coal is the dominant fuel. The different assumptions about fuel use do not materially affect the assessment of the cost of emissions reductions in the body of the report. However, growers that are using coal will face a much larger proportionate increase in their emissions costs per unit of energy used than users of gas as emissions for coal are approximately double for those for gas.

The EEUD category for indoor cropping includes three distinct covered growing activities: vegetables, flowers and nursery. Table 4 below summarises the energy use and emissions by fuel over the calendar years 2017 to 2020<sup>8</sup>. The key points are:

- Energy use has fallen by 17 percent and emissions by 21 percent due to reduction in energy from coal by 31 percent.
- Coal remains the dominant source of energy for the industry supplying 52 percent of energy used in 2020 followed by gas which supplied 38 percent of energy requirements.

Energy use data is from the EEUD. Emissions are calculated for fossil fuels using emission factors published by the Ministry for Environment for 2020. These factors do not change materially from year to year. Emissions for electricity are calculated from MBIE data on energy delivered and emissions from electricity generation. This emission factor has increased since 2017 due mainly to increased use of coal-fired thermal generation. However, the increase in emissions for electricity generation did not have a material impact on the emissions for indoor cropping as the use of electricity is so low.

#### Table 4 Indoor cropping energy use and emissions

Annual energy use in terra joules (TJ) and emissions in tonnes of CO<sub>2</sub> equivalent (t CO<sub>2</sub> e)

| Energy use by fuel (TJ)   |   |   |   |  |
|---|---|---|---|--|
| Fuel  | 2017  | 2018  | 2019  | 2020   |
| Coal  | 2,706.4   | 2,156.2   | 2,205.4   | 1,869.0  |
| Diesel  | 234.4   | 236.4   | 309.5   | 306.0  |
| Electricity Motors  | 12.9  | 11.4  | 12.7  | 13.1   |
| Electricity Lights  | 13.6  | 12.0  | 13.3  | 13.8   |
| Natural Gas   | 1,314.1   | 1,222.6   | 1,241.1   | 1,351.6  |
| Total   | 4,281.4   | 3,638.7   | 3,782.1   | 3,553.6  |
|   |   |   |   |  |
| Emissions by fuel (t CO <sub>2</sub> e)   |   |   |   |  |
| Emissions by fuel (t CO <sub>2</sub> e)<br>Fuel   | 2017  | 2018  | 2019  | 2020   |
| Emissions by fuel (t CO <sub>2</sub> e)<br>Fuel<br>Coal   | <b>2017</b><br>242,669                            | <b>2018</b><br>193,339                            | 2019<br>197,752                                   | 2020<br>167,586                                |
| Emissions by fuel (t CO <sub>2</sub> e)<br>Fuel<br>Coal<br>Diesel   | 2017<br>242,669<br>16,308                         | 2018<br>193,339<br>16,442                         | 2019<br>197,752<br>21,532                         | 2020<br>167,586<br>21,289                      |
| Emissions by fuel (t CO <sub>2</sub> e)<br>Fuel<br>Coal<br>Diesel<br>Electricity Motors                       | 2017<br>242,669<br>16,308<br>357                  | 2018<br>193,339<br>16,442<br>301                  | 2019<br>197,752<br>21,532<br>387                  | 2020<br>167,586<br>21,289<br>454               |
| Emissions by fuel (t CO <sub>2</sub> e)<br>Fuel<br>Coal<br>Diesel<br>Electricity Motors<br>Electricity Lights | 2017<br>242,669<br>16,308<br>357<br>375           | 2018<br>193,339<br>16,442<br>301<br>316           | 2019<br>197,752<br>21,532<br>387<br>406           | 2020<br>167,586<br>21,289<br>454<br>476        |
| Emissions by fuel (t CO2 e)FuelCoalDieselElectricity MotorsElectricity LightsNatural Gas                      | 2017<br>242,669<br>16,308<br>357<br>375<br>70,979 | 2018<br>193,339<br>16,442<br>301<br>316<br>66,036 | 2019<br>197,752<br>21,532<br>387<br>406<br>67,034 | 2020<br>167,586<br>21,289<br>454<br>476<br>476 |

Source: NZIER

The reliance on coal as the main source of energy contrasts with survey findings that gas is the main heating fuel for covered vegetable crops. The difference may be partially explained by higher proportionate use of coal in nursery and flower production than for covered crops.

#### A.2 Energy and emissions cost

We combine the data on energy use and emissions with recent fuel and NZU prices to provide an indication of the energy cost incurred by indoor cropping and then compare this to reported revenues for the sector as a starting point for assessing the impact of changes in energy and emission costs on the viability of indoor cropping.

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#### Table 5 Indoor cropping energy and emissions prices

Annual energy prices for energy \$ per giga joule ((GJ)) and \$ per NZU ( $t CO_2 e$ )

| Prices of energy by fuel<br>(\$/GJ) <sup>1</sup> |       |       |       |       |
|--|-------|-------|-------|-------|
| Fuel   | 2017  | 2018  | 2019  | 2020  |
| Coal <sup>2</sup>                                | 5.81  | 5.97  | 6.15  | 6.56  |
| Diesel   | 20.33 | 27.19 | 26.25 | 20.08 |
| Electricity Motors                               |       |       |       |       |
| Electricity Lights                               |       |       |       |       |
| Natural Gas (Industrial) <sup>3</sup>            | 6.99  | 7.37  | 6.80  | 7.14  |
| Natural Gas (Commercial)                         | 15.20 | 13.99 | 14.26 | 15.34 |
| Price of emissions (\$/t CO <sub>2</sub><br>e)   |       |       |       |       |
|  | 2017  | 2018  | 2019  | 2020  |
| NZU  | 18.23 | 22.85 | 24.69 | 30.58 |

Note:

- 1 Except for coal the annual average prices from energy are calculated by MBIE.
- 2 Coal prices are the cost to Genesis of coal used for electricity generation at Huntly. This is likely to be at least 20 to 30 percent below the cost of coal to covered crops growers because of wholesale margins and additional transport costs.
- 3 The natural gas price paid by covered crop growers is likely to be closer to the 'Commercial' price than the industrial price. We have included both to allow a comparison of the likely range of the impact of increases in carbon prices on energy costs.

Source: NZIER

9

#### Table 6 Indoor cropping energy and emissions cost

Annual energy use and gross emissions costs in \$ million by fuel

| Energy cost by fuel (\$m) |       |       |       |       |
|---------------------------|-------|-------|-------|-------|
| Fuel                      | 2017  | 2018  | 2019  | 2020  |
| Coal                      | 15.72 | 12.87 | 13.57 | 12.27 |
| Diesel                    | 4.77  | 6.43  | 8.13  | 6.15  |
| Electricity Motors        |       |       |       |       |
| Electricity Lights        |       |       |       |       |
| Natural Gas (Industrial)  | 9.18  | 9.01  | 8.44  | 9.64  |
| Natural Gas (Commercial)  | 19.97 | 17.10 | 17.70 | 20.74 |
| Total <sup>1</sup>        | 40.46 | 36.40 | 39.39 | 39.15 |

Note:

1 Total energy cost based on 'Commercial' natural gas prices.

| Emissions cost by fuel (\$m) |      |      |      |      |
|------------------------------|------|------|------|------|
| Fuel                         | 2017 | 2018 | 2019 | 2020 |
| Coal                         | 4.42 | 4.42 | 4.88 | 5.13 |
| Diesel                       | 0.30 | 0.38 | 0.53 | 0.65 |
| Electricity Motors           |      |      |      |      |
| Electricity Lights           |      |      |      |      |
| Natural Gas                  | 1.29 | 1.51 | 1.66 | 2.23 |
| Total                        | 6.01 | 6.30 | 7.07 | 8.01 |

Source: NZIER

At an average carbon price of around \$30 per NZU gross emission costs are less than 20 percent of energy costs (assuming the price of coal is adjusted upward to reflect the likely cost to covered crop growers. At current carbon prices in excess of \$60 per NZU gross emissions cost will be approaching 40 percent of energy cost.





Hutt City Council 30 Laings Road Private Bag 31912 Lower Hutt 5040 New Zealand

www.huttcity.govt.nz

T 04 570 6666 F 04 569 4290

25 November 2021

Emissions Reduction Plan Consultation Ministry for the Environment PO Box 10362 Wellington 6143

Attention: Submission's analysis team

#### <u>Submission on the Ministry for the Environment's "Te hau mārohi ki anamata Transitioning to a</u> <u>low-emissions and climate-resilient future"</u>

I am writing to you on behalf of Hutt City Council's Climate Change and Sustainability Committee.

On 13 October 2021 the New Zealand Government released its draft emissions reduction plan *Te* hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future, where it is noted that this round of consultation aims to determine what is achievable over the next few years, with deep emission cuts in the second budget period.

Our committee supports the policy direction but encourages the government to not delay emission cuts. We agree that strong, joint signals are required from business, community leaders, iwi, hapū, local government and central government.

This Government's plan seeks feedback on how to best achieve the targets of biogenic methane emissions reducing to 24-47 percent below 2017 levels by 2050, and all other greenhouse gasses reaching net zero by 2050. Our Committee endorses the five principles that will be used to guide the decarbonisation of New Zealand.

- In line with the global mission of limiting warming to 1.5°C, Hutt City Council has already taken several significant actions:
  - In November 2018 the Council adopted an organisational emissions target of net zero by 2050.
  - In June 2019 the Council declared a climate emergency.
  - In July 2021 the Council approved an Interim Carbon Reduction and Climate Resilience Plan 2021-31 for Hutt City Council.
  - In September 2021 the Council joined the international Cities Race to Zero climate initiative.
  - Together with our community, we are currently developing a city-wide roadmap to net zero via a co-design process.

As part of the global mission, we are already taking many concrete and measurable steps across several work areas, as outlined in our <u>Interim Carbon Reduction and Climate Resilience Plan 2021-31</u>. Many of the actions undertaken, or planned for, directly align with the policy direction proposed in the Government's consultation document. However, we implore the Government to hasten action in this direction, in order to maintain, and build, the momentum gained in the run from COP21 to COP26.

We fully support the direction of aligning systems and tools and the objectives of the equitable transition strategy. It is important that the national climate change response is collaborative, and it is critical that action is taken rapidly to meet the 2030 target. Stronger partnerships between central and local government are needed.

For the global climate response to be accepted at all levels of the economy, it is crucial that all government departments and ministries are successful in achieving mandated neutrality as soon as possible. We support the necessity of this action and note our own concrete plan to neutrality.

Our committee endorses the government's intention to employ mission-orientated innovation. As New Zealand moves to a 100% renewable electricity system, substantial changes will be required, albeit the necessary technology is already available. Our committee appreciates the massive potential growth in green industry and suggests the crown research institute Callaghan Innovation, based in Lower Hutt, as a likely growth lever.

Our committee also supports the sentiment of including the bioeconomy within the circular economy and urge the inclusion of Mātauranga Māori within such a system. In support of the bioeconomy our council is in the process of exploring means to accelerate reforestation of Belmont Regional Park, and improving quality of our existing forest. We urge the government to reserve the limited availability of biofuels for hard-to-electrify industry, before allowing it to be consumed by easily electrified low-grade heat.

We support the direction in which the Government is moving regarding transport emissions, and notes that we are well on track to achieve our goal of a fully electric corporate fleet by 2030. The most recent city-wide greenhouse gas inventory indicates that 56% of Lower Hutt's emissions are from transportation. It is noted that significant further investment will be required, in a number of areas, to achieve the mode shifts necessary to deliver a useable and effective low/zero carbon public transport system. The transition to active transport in particular is still proving to be difficult, and stronger support from central government is needed.

Our committee supports an ambitious energy strategy, with 100% renewable electricity in a normal hydrological year. Hutt City Council will be natural gas free by 2030, the benefit of which will be fully realised with a 100% renewable electricity grid. We note that the Climate Change Commission's draft advice recommended a banning of new gas connections from 2025 at the latest, and that this target was softened in the final advice. Our Committee supports the inclusion of this target in the national transition plan because it avoids the lock-in of a high carbon fuel in new buildings for years to come.

Our Committee strongly supports all actions proposed regarding waste and notes the success of the gas capture and destruction at Council's own Silverstream landfill. Hutt City Council is working on the

establishment of a new resource recovery park and investigating the installation of a methane collection and destruction system at the closed Wainuiomata landfill.

Our Committee endorses the government's policy direction and looks forward to the final decarbonisation plan, along with the national momentum that this will need to generate, as proposed policies crystalise into realised emission reductions.

Yours faithfully,



**Cr. Josh Briggs** Chair Climate Change and Sustainability Committee Hutt City Council

| From: | lan Honeyfield                      |
|-------|-------------------------------------|
| То:   | climate consultation 2021           |
| Date: | Friday, 19 November 2021 1:05:55 pm |

#### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Planting hole farms in pine trees to offset another industry carbon footprint is ridiculous!! Great farms n rural communities are being destroyed. Where is your food going to come from once Nz is all planted in pine trees?? Why don't u make a system so farmers can buy subsided native plant n get crews into help plant them? I am sure most farmers have somewhere they would love more trees but it is a huge cost n time which farmers don't have a lot of. Please stop selling land to overseas investors!!!!

Sent from my iPhone



## Industrial Symbiosis Kawerau (ISK) Inc. Submission On Te Hau Mārohi Ki Anamata | Transitioning To A Low-Emissions And Climate-Resilient Future

#### 1. Introduction

The following is Industrial Symbiosis Kawerau's (ISK) Inc. submission on the Ministry for the Environment. 2021. Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.

Our contact details are:

| Name         |                                      |
|--------------|--------------------------------------|
| Organisation | ISK Inc.                             |
| Address      | Level 1, 9 Manukorihi Drive, KAWERAU |
| Telephone    |                                      |
| Email        |                                      |

#### 2. Background to ISK Inc.

ISK Inc. is an incorporated society whose membership comprises Kawerau-based businesses including wood/fibre processing; geothermal energy, industrial engineering, service businesses, Maori business groups and the Kawerau District Council. ISK was founded on circular economy principles and is a collaboration between different enterprises for which the geographic proximity of each allows for the sharing of resources, increasing the viability and competitive advantage of the other.

ISK involves the exchange of materials, energy, water, by-products, services, knowledge, intellectual property, social capital and networks to reduce resource costs, increase revenues and create new business opportunities. It is a smarter way of companies utilising their resources, residues and by-products to eliminate waste. This leads to new commercial opportunities, job creation and better environmental outcomes.

Kawerau has the unique advantages of being a well-established wood processing centre and home to the world's largest application of geothermal energy for direct industrial use. Further, it is strategically located having proximity to well-established road and rail transport infrastructure and the Port of Tauranga. ISK aims to capitalise on this unique combination of factors by adopting progressive practices that embrace change, leading to a new industrial evolution of smarter, cleaner business.

Kawerau is on the cusp of significant economic growth along with the rest of the Eastern Bay of Plenty. Kawerau's main growth project - the Kawerau Putauaki Industrial Development (KPID) - is one of the four key "catalytic" Eastern Bay of Plenty infrastructure projects identified in the *Eastern Bay of Plenty Regional Development Project* report completed in 2018. These four projects are viewed as being "... critical to unlocking other transformative projects" across the region. Specifically, KPID is expected to unlock significant benefits including generating an estimated 1,460 jobs and \$183m in local GDP by 2030.



## 5. Transport including Green Hydrogen /Low Emission & Bio Fuels

We are pleased to note that ERP recognises the role and importance of green hydrogen and low emission/biofuels in reducing carbon emissions from the transport and energy sectors – there is not the prevalent emphasis on electric vehicles that was evident in the Climate Change Commission's "Advice" earlier this year.

We suggest that the ERP needs to address the barriers to advancing low/zero-emission energy streams. In particular, we are aware that high electricity prices are stifling the development of green hydrogen production, which is primarily manufactured at scale by an electrolysis process.

We support *Transport target 4*: Reduce the emissions intensity of transport fuel by 15% by 2035 (page 71); particularly the recognition given to the role of lower carbon liquid fuels, such as biofuels, alongside electrification and hydrogen in achieving this target.

As a general comment, we note the ambitious targets set for all four Transport targets – 2035 is not that far away. We do question the practicality of achieving those targets. Our impression from the ERP is that target achievement relies on the supposition there will be sufficient, affordable low/zero carbon-emitting vehicles and fuels readily available soon.

Regarding question 56 (page 81) - we do not support the Climate Change Commission's recommendation to set a time limit of 2030 for light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa. We note that by definition "light vehicles" include utes and light commercial vans. Both vehicle types are commonly used by industry and commercial enterprises that rely on them to operate their businesses. We believe that the adoption of the recommended 2030 date could impact the viability of much of Aotearoa's business. We suggest that the principal issue is not the type of engine, rather it is the types of fuels used - particularly fossil fuels. The ERP has correctly identified the role of biofuels in helping achieve emissions reductions and such fuels are/can be used to successfully power internal combustion engines.

#### 6. Building and Construction

We support the ERP vision "... to significantly reduce all building-related emissions as soon as possible." and agree with the principle that "There is significant potential for this sector to help reduce emissions in other sectors."

We note and support the recognition that "Embodied carbon emissions are emitted during the manufacture and use of the materials and products that form the building, and across its life, from construction to deconstruction". However, we suggest that the ERP should have a stronger approach to minimising the carbon footprint of the type of materials used in building construction. This is noticeably missing from the Government's proposed policies and methods to reduce building-related emissions as outlined in the ERP's Building and Construction section (pages 90 – 97).

We further suggest Government should be more proactive and develop mechanisms similar to the following international examples of decisive measures to lower carbon emissions from building construction:

 The city of Amsterdam has mandated that 20 per cent of all new housing projects in the Dutch capital must be constructed with wood or other biobased materials from 2025. Increasing the use of timber in the city's construction projects is hoped to reduce reliance on steel and concrete – materials that create large amounts of carbon dioxide during production. In turn, this is expected to help the Dutch capital meet its goal of "climate neutrality", or net-zero greenhouse gas emissions, by 2050.



- In New York, the city council has approved the use of mass timber for the construction of buildings of up to 25.9 metres tall.
- In 2020, the French government agreed that all new public buildings in the country must be built from at least 50 per cent timber or other natural materials by 2022.

#### 7. Waste

We support the ERP objective of reducing emissions from waste, particularly through waste reduction. We are very supportive of the recognition given to the importance of utilising a 'circular' resource recovery system to address the waste issue effectively, rather than deal with it from a landfill management approach - which is an "ambulance at the bottom of the cliff" strategy.

Equally, we are supportive of the Partnership approach (page 110) as being pivotal to the transformation of the waste sector.

We suggest the ERP could underscore these principles by including a declaration of Government support for research/initiatives that will enhance waste minimisation as one of the planned measures to reduce emissions.

We note that there is only one reference to textiles in the document (page 105) as a particular waste stream and suggest that the ERP needs to address disposal of used textiles. Recent research estimates that annually 220,800 tonnes of textiles are landfilled, annually, in New Zealand (Bernadette Casey and Brian Johnston - "Looking In The Mirror: A review of circularity in the clothing and textile industry in Aotearoa" - 2020). This equates to 44 kg textiles per person, which in terms of the climate change impact, equates to 397,440 tonnes of CO2 emissions per year. We believe there are considerable opportunities for recycling/reusing textiles to minimise the current volumes consigned to landfills.

Therefore, we suggest that Table 10: Waste policies abatement scenarios for each budget period (page 126) should include specific policies relating to textiles.

#### 8. Forestry

We support the proposed development of the Forestry and Wood Processing Industry Transformational Plan (ITP) and a new planning and advisory service within Te Uru Rākau New Zealand Forest Service (page 114). In particular, we are very supportive of the first paragraph: "There is potential to reduce emissions by replacing emissions-intensive materials and fossil fuels with domestically manufactured wood products and wood-derived bioenergy, such as biofuels. Long-lived wood products such as engineered wood products could also be a substitute for emissions-intensive materials such as concrete and steel, and store carbon for many decades". This reinforces our feedback on Building and Construction.

We consider both instruments will have strategic roles in supporting a low emissions economy and look forward to contributing to the development of the ITP.



**ISK Chairperson** 



**ISK Projects Manager** 

24 November 2021

Submission to:Ministry for the EnvironmentConcerning:Te hau mārohi ki anamata. The emissions reduction plan

## Institute background

1. The International Climate-Safe Travel Institute (ICSTI) works to bring to the attention of policy-makers and aviation users the urgent need to reduce aviation emissions based on the targets in the Paris agreement. ICSTI works with others, including experts in NZ and overseas, to provide advice on practical ways to reduce air travel and encourage low emission travel alternatives. Its principals include Chris Watson, architect, and Tom Bennion, lawyer, who are respectively the editor and authors of *Beyond Flying. Rethinking air travel in a globally connected world*, a series of essays, including several from internationally renowned environmentalists, about personal reasons and efforts to drastically reduce personal air travel due to climate change.<sup>1</sup>

#### Four key recommendations

- 2. Our submission focusses on the recommendations in the report regarding transport.
- 3. We think that the report lacks four key actions which must be progressed if the reduction actions proposed in the report are to significantly reduce transport emissions.

# 1: Legislate to require new roading projects to account for a social cost of carbon

4. This advances your proposal to "Ensure further investment for additional highway and road capacity for light private vehicles is consistent with climate change targets."

<sup>&</sup>lt;sup>1</sup> https://www.greenbooks.co.uk/Book/468/Beyond-Flying.html

 The cost should follow the estimates of the Intergovernmental Panel on Climate Change to stay below the 1.5°C limit. In 2018 these were USD\$ 135–5500 tCO2 in 2030 and USD\$ 245–13000 tCO2 in 2050.<sup>2</sup>

#### 2: Trial free public transport on key routes in major cities

- 6. This advances your proposal to "Make public transport cheaper."
- Many cities are providing this service. Results are significant. For example, the city of Hasselt in Belgium abolished fares in 1997 and ridership was as much as "13 times higher" by 2006.<sup>3</sup>

# 3: Require all state agencies to be zero carbon in transport emissions by 2025

8. This would be consistent with the Carbon Neutral Government Programme (CNGP) which requires state agencies to be carbon neutral by 2025. Making transport emissions zero carbon would deal with the biggest emissions for most government agencies, which is air travel. Video conferencing and battery EVs can replace air travel.

#### 4: Ban rewards programmes that stimulate fossil fuel demand

- 9. Petrol discount schemes such as AA Smart Fuel, and frequent flyer rewards such as Flybuys and Airpoints schemes should be a first target of behavioural change because they are the only schemes that positively reward consumers for higher CO2 emissions.
- 10. It is surprising that the opportunity to ban airpoints schemes or even to urge airlines to withdraw them has not been identified under measures for reducing aviation emissions or driving behavioural change. We would have thought that the Commission would already have raised this issue with Air NZ's Sustainability Advisory Panel.<sup>4</sup>
- 11. A ban on frequent flyer reward schemes was researched and reported on in 2019 by the Imperial College London, and published by the UK Climate Change Commission. The report is entitled "Behaviour change, public engagement and Net Zero".<sup>5</sup>

<sup>&</sup>lt;sup>2</sup> IPCC SR15 Ch4 2018, p. 374. In 2010 USD.

See also: https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15 Chapter4 High Res.pdf

<sup>&</sup>lt;sup>3</sup> https://en.wikipedia.org/wiki/Free\_public\_transport#cite\_note-stad-8

<sup>&</sup>lt;sup>4</sup> https://www.airnewzealand.co.nz/sustainability-advisory-panel

<sup>&</sup>lt;sup>5</sup> <u>https://www.theccc.org.uk/publication/behaviour-change-public-engagement-and-net-zero-imperial-college-london/</u>

and see also: https://www.theguardian.com/environment/2019/oct/14/air-miles-should-be-taxed-to-deter-frequent-fliers-advises-report

12. A ban on frequent flyer rewards schemes would be particularly effective in NZ because few airlines operate in the country. Travellers would have limited choice to move to other carriers who are based overseas but run a domestic operation. In any event, since the intention is generating awareness and behavioural change at a mass level, the fact that some travellers might seek to avoid the ban is not a defect. Indeed, we expect that other airlines would not like to be tagged as the 'choice of polluters'.

Tom Bennion / Chris Watson For ICSTI PO Box 25433 Wellington 6140

## **Emissions Reduction Consultation**

## **SUBMISSION**

Name: Jack Lionel Woodward

#### Region: Auckland/Tamaki Makaurau

**Consent to release of information:** I consent to the publication of information in this submission and my name on the Ministry website.

#### **PERSONAL STATEMENT:**

I have chosen to restrict my Submission to matters in which I have a particular interest and personal knowledge and involvement. I was born and grew up in a small rural town in the North Island. Although I was not from a farming family I worked extensively on farms as a teenager and young man. My working career was as a power system electrical engineer and educator. As a tramper my holidays have been spent in the bush and among the mountains. I am a member of NZ Forest and Bird. I have belonged to the NZ Native Forest Restoration Society for more than 30 years and taken part in the acquisition and care of Forest Reserves from Northland to Southland. Negotiations are at present under way to acquire Patui, a 361 Hectare property in eastern Taranaki – more than half of Patui is in mature native forest, home to a diverse range of native birdlife and to the threatened long-tailed bat.

#### **GENERAL:**

Aoearoa-New Zealand's per-capita emissions of climate change gases, particularly biological Methane, are high by world standards and have in fact increased since 2005. To meet even the relatively modest carbon budgets proposed by the Climate Change Commission will be difficult and the reduction of gross emissions is the first priority. This difficulty is enhanced by the separate treatment accorded by Government policy to biological Methane, a short-lived but extremely powerful gas. Calls for rapid reduction of Methane emissions were made at COP26 The carbon budgets can only be met however if full advantage is taken of the capacity of A-NZ's natural systems to capture, store and retain carbon. Recourse to the purchase of off-shore carbon credits should be a last resort.

A-NZ's natural ecosystems (forests, shrublands and wetlands) store billions of tons of carbon. They must be protected, restored and extended.

Plantation forests will be important in meeting carbon budgets in the short to medium term but should not be allowed to unduly alienate productive farmland. Government policy should ensure that all marginal and erodible land reverts to native forests by 2050.

#### FORESTS:

• Expand browsing pest control on all Forest and Conservation land managed by Government Agencies.

- Establish a programme to deliver restoration of native vegetation cover across all marginal and erodible land in New Zealand.
- Support the planting of permanent indigenous forests.
- Develop a national wetland restoration plan. Healthy wetlands and well-managed agricultural peat soils can make a significant contribution, storing the carbon they sequester indefinitely as long as they remain wet.
- Include carbon gains from peatlands in A-NZ national carbon accounting.
- End native vegetation clearance on private land.

#### AGRICULTURE:

- Introduce Agriculture into the ETS, or place a cap on ruminant animal numbers.
- Phase out the use of synthetic Nitrogen fertiliser to reduce emissions and to limit the leaching of nitrate into aquifers and waterways.
- Limit the importation of supplementary feed material (oil palm kernel), necessary for the unsustainable intensification of dairy farming.
- Develop a programme to support farmers to convert to low-input and regenerative agriculture systems to reverse biodiversity loss, improve carbon retention and water management and reduce nitrous oxide emissions.
- Direct Pamu/Landcorp to to trial and develop at scale methods for reducing emissions from land-use so that it becomes the best practice climate leader for agriculture, forestry and carbon storage for land-use in A-NZ.

#### ENERGY:

- Prohibit new or expanded coal mines across New Zealand.
- Phase out existing coal mining and oil and gas drilling while addressing the needs of affected workers and communities.
- Prioritise existing gas reserves for back-up and dry year electricity generation. Avoid the use of coal in electricity generation.
- Incentivise the construction of additional renewable (wind, solar and geothermal) electric generation capacity. The siting of wind farms must be sensitive to possible environmental damage, as should the environmental impact of geothermal bores.
- In assessing possible Pumped Storage plants as solutions to Dry Year electricity shortages, the assessment of environmental impacts is critical. For example, a large site like Lake Onslow could destroy important wetlands and the habitats of threatened plant and animal species.
- Ensure that any solutions support an overall reduction in greenhouse gas emissions.
- Review the structure and operation of the electricity system, including ownership and market operations to minimise dry year risk.
- The strengthening of the electricity transmission grid should be prioritised to avoid any delay in commissioning new Renewable energy plants.

Jack Woodward

#### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Please stop letting farms being sold for carbon farming. We really cant keep losing good farming land.

Janice Avenell. Retired farmer.

#### Submission re ERP, Emissions Reduction Plan, November 2021

From: Jenny Campbell as Co-Convenor of Coal Action Murihiku (CAM) & alongside personal perspectives.

QSM for the Environment



25 November 2021

#### <u>*He iti, He pounamu*</u> It may be small but it is very precious

Ko Oreti toku awa Ko Takitimu toku maunga, Ko Takitimu toku waka Ko Ngaitahu toku iwi Ko Te Rau Aroha toku marae No Mossburn toku kainga Ko Jenny Campbell ahau

#### **INTRODUCTION**

He waka eke noa - We are all in this together.

As a great grandmother I want New Zealand to take bolder action on climate change because I'm worried about the world we are leaving future generations to have to deal with if we do not take meaningful action immediately. No more excuses! We need urgent change, with measurable goals, policies we can implement now, accountability across all sectors, and no more delays. I am calling for this not only to ensure a liveable world for people but also for every other living things which cannot speak for themselves.

I join with other members of CAM in raising continuing issue with on- going coal production in Murihiku/ Southland. This is a major concern for us as local Southland District Council has taken action to allow a possible extension of an existing mine- going against our Government's Climate Emergency call. Our kaupapa is in line with the national group Coal Action Network Aotearoa's (CANA) kaupapa.

The New Zealand Government has declared a Climate Emergency. The seriousness and ambition of the Climate Change Commission's advice to Government should reflect that as

should our forward thinking our Emissions Reduction Plan (ERP). Now is not the time for further procrastination or half-measures. However the draft targets and timelines are patently inadequate in the face of the urgency of the growing climate catastrophe.

In all of this consideration and acknowledgment of Te Tiriti o Waitangi as our founding document brings with it the essential need to fully consult with Maori and the kaupapa around solutions and understanding of our biodiversity along with the appreciation of the need to protect Te Ora o te Taioa.

To meet the challenge of climate change, it is essential that Aotearoa plays its part, both domestically and internationally, and serves as an example to other nations. Our team of five million responded well, acting communally, on scientific advice, to keep ourselves safe from COVID-19. Now we need to do it again, to help save the world from an even greater threat-further Climate Change.

The majority of people in Aotearoa realise the urgency of climate action and want the Government to act now, in strength and justice. The Government must publicise and follow the science, so that all parts of society can make a planned and just transition away from those decisions and actions which are causing this increasing threat. The Government has the mandate to act now with the majority of New Zealanders expecting this – they just need to see the Government leading the way.

It is essential to our survival as a civilisation, that we do everything we can to reduce greenhouse gas emissions, particularly carbon dioxide, methane, and nitrous oxide.

We need to focus on redefining economic growth and reducing consumerism. An energy descent is still possible.

As with COVID-19, people will respond to clearly expressed policies required to meet climate targets. We need to step up, as we have made too little effort to date. As a developed nation, Aotearoa has the capacity and the means to do this, compared to other countries, many of which look to us for an example.

If we do not act decisively now, it will be much harder in the future. We are already seeing the disastrous consequences of inaction for the global poor, who have contributed minimally to global warming, especially impacts in Pasifika. In particular it impacts more severely on women and children across the globe.

Ecosystem collapse is already occurring, as temperatures increase and the forests and oceans edge towards becoming carbon sources, rather than sinks.

Above all we have a responsibility to future generations; not only to humans, but to every other living species which cannot speak for themselves. This is a moral and ethical commitment.We acknowledge the work done by the Climate Change Commission to produce its draft advice in difficult conditions and under time pressure and thank them for their thoroughness and commitment to this task. I also thank the many individuals, groups and journalists who have analysed the report and produced submission guides around ERP so we can implement action with urgency.

We commend the submission of Ora Taiao, with its focus on the health and well-being benefits of climate action and for acknowledging how Te Tiriti is central to all this work. Also all the other environemtal groups such as Forest & Bird, Greenpeace, 350 Aotearoa, Parents for Climate, Wise Response, Coal Action Network Aotearoa (CANA), Fossil Free State Sector, ECO, ..... for all the hard work they have done under time pressure, to raise many issues which it is essential our Government needs to take- very urgently, in order that we can avoid temperature rise above 1.5 degrees.

We also want to express my extreme disappointment, frustration and embarrassment at the Government's continued refusal to take any meaningful action to reduce emissions- when they know the science, urgency and the call from thinking NZers to act now! At COP26, the huge gap between the Government's spin and its blatant inaction was there for all to see- how embarrassing on a world stage! While the Minister stood to make commitments to action in one room, his officials were busy preventing action in another- what message does this send? A reliance on commitments which are only talk along with carbon accounting techniques that are not accurate, has gone past its 'used by date'!

## <u>Te Tiriti</u>

Crown policy must give effect to Te Tiriti in achieving emissions targets by involving and consulting with Māori as well as measures to enable iwi, hapū and whānau to exercise their rangatiratanga and kaitiaki role in respect of taonga within their rohe.

For us, the most important areas where we would like to see stronger policies in the plan are :

- An end to coal use, no new mines or extensions of existing mines by 2027.
- No importing of coal
- Divest Public Funds from Fossil Fuels
- Stronger emissions pricing & make polluters pay
- Re-structure electricity sector
- Stronger targets for emission reductions of CO2, methane & nitrous oxide in agriculture & support for regenerative practices.
- Phase out of synthetic nitrogen fertiliser by 2030
- Ensuring a just transition to ensure that the most vulnerable communities are not left behind.
- Māori leadership/upholding tino rangatiratanga and active involvement of iwi and hapū
- Engagement with Pacific communities & financial support to implement a just transition
- Climate change education in schools & public
- Reducing emissions in New Zealand rather than relying on overseas offsets
- Native biodiversity & native forest restoration over pine trees

- Blue carbon strategy (healthy coastal & marine ecosystems for carbon storage)
- Sustainable housing, building practices, and urban design
- Public transport infrastructure
- Zero waste & circular economy
- Renewable energy
- Degrowth & lower consumption being cognisant of the earth's ability to continue giving beyond its capability.
- Local food production reducing food miles
- Good news stories to encourage others as they make a difference
- Everyone is capable of making changes and reducing their impact on the earth- every step makes a difference.
- Reduce product packaging
- Expand native forest regeneration in conjunction with pest eradication

2. What new initiatives would you include in an emissions reduction plan for Aotearoa?

#### Coal & other Fossil fuels.

We are involved in many environmental organisations all urging immediate moving out of all fossil fuels and coal in particular- this is an international movement and we need to heed this especially in light of our 'clean green image'- we are losing our social licence internationally which will impact on our economy as well as reputation.

We call on the Government to:

- Announce an immediate end to coal exploration and prospecting
- Announce an end to the approval of new coal mines, or extensions of existing mines
- Revoke all unused fossil fuel permits and end all fossil fuel permit extensions.
- End onshore oil and gas exploration and processing
- Phase out existing coal mines by 2027
- Phase out coal imports by 2027

#### **Industrial heat**

We call on the Government to:

- Prohibit development of new fossil fuel burning heat plant
- Expand the scope of, or provide alternatives to, the GIDI fund to support industries of all sizes to decarbonise
- Set a 2027 deadline for all low- and medium-heat process heat boilers to transition to renewable energy
- Use the Government sector as an example for how to make this happen- with urgency

#### **Energy generation**

We call on the Government to:

- Develop a national energy strategy
  - Our national grid requires coal because of constrained capacity
  - Constrained capacity is exacerbated by an insufficient energy efficiency and insufficient conservation incentives
  - Locally based energy generation from solar, wind or hydro is a cost effective way to reduce national demand and incentivise energy efficiency and conservation - but counter to the economic interests of the industry (a perverse outcome for Aotearoa)
  - A national energy strategy must be predicated on sustainability, local community resilience (with regards to Climate Change events) and zero carbon by 2027
- Get energy production, transmission, distribution and pricing back under public control by 2025.
- Reform the electricity system so (a) emissions reduction becomes a central goal (b) perverse incentives to burn fossil fuels to keep the wholesale price high are removed the incentive should be to use renewables, not to use fossil fuels
- Make energy efficiency the top priority for all new energy initiatives
- Move to 100% renewable electricity generation by 2030
- Provide zero interest loans for household solar and grant funding for community energy schemes.
- Remove barriers to community energy projects and provide a "one-stop-shop" of information on how to develop community energy projects.
- Fund the installation of solar panels on government buildings, schools and social housing, along with all new private industrial 'shed' buildings large sloping roofs are ideal.
- Ensure that, once wind farms are consented, they are built end the practice of energy companies sitting on wind farms consents rather than building them
- Extend finance and support for home insulation and heat pumps so that all 600,000 under-insulated homes are insulated by 2030.
- Update the Building Code so that all new homes are net zero, following passive house standards.
- Build all new Kāinga Ora and KiwiBuild homes according to passive house standards, including clean energy generation, rainwater collection and greywater recycling.

#### **Emissions Trading Scheme**

We call on the Government to:

- Bring Agriculture into the ETS at the processor level from 2022- this is a top priority and essential to maintain our international market credibility and local social licence.
- End free industrial allocations by 2030 at the latest
- Sharply increase the ETS floor price so that it reaches at least \$250/tonne by 2030
- Recycle ETS revenue to reduce energy poverty and support decarbonisation, especially of hard-to-abate industries
- End Government supply of additional credits into the ETS when price benchmarks are reached
- For industries that require high-heat boilers and/or have high energy requirements:

- 1. Conduct a strategic review of the industry to determine whether it is needed in Aotearoa to meet domestic requirements, and if so, at what scale
- 2. If it is needed, require it to sign up to a transition plan including an agreed date for complete decarbonisation, as soon as possible and prior to 2050
- Give the Climate Commission independent powers to influence the price of emissions.
- Reform the ETS through much stronger regulatory oversight, changes to free allocations and forestry, and strategic use of ETS revenue in line with a just transition.

#### Agriculture

I come from a sheep farming family and am now retired, living in a small country town. I belong to the local Catchment group where farmers are implementing many emissions reduction practices, learning from each other and moving to more regenerative practices. With support & encouragement they are re- establishing wetland, growing natives, reducing both pest plants & animals, valuing organic living soils and reducing stock numbers- with consequential better mental health, family life and community involvement. They expect to change and are very concerned about the future of our planet.

Agriculture and fossil fuel use are strongly correlated. A lot of our coal and gas consumption is to support industrial dairying, which has devastating effects on the local environment and on human health, as well as its climate effects.

We call on the Government to:

- Reduce national herd size and stocking rates in accordance with the Climate Change Commission's recommendations, especially dairy herds.
- Price agricultural emissions in HWEN / ETS from 2022, with no free allocations
- Phase out of synthetic nitrogen fertiliser by 2030
- Phase out all imported feed by no later than 2024
- Incentivise the transition of rural land use to plant-based products and renewable electricity generation
- Establish transition hubs in line with the recommendations of the Aotearoa Circle's Fenwick Report and a \$1 billion regenerative farming fund, in line with Greenpeace's policy briefing

We support the following calls from Oxfam Aotearoa:

**Price agricultural emissions in the Emissions Trading Scheme at the processor level from 2022.** This finally brings the sector into the ETS like the rest of the economy, and puts the burden on big companies like Fonterra, AFFCO, and the fertiliser companies to stimulate industry-wide change, rather than individual farmers. This could happen now – there is no need to wait. To stimulate adoption of low-emissions practices, free allocations to agricultural processors need to be minimal, and phased out by 2030.

**Phase out synthetic nitrogen fertiliser by 2030.** Synthetic fertiliser companies Ballance and Ravensdown are <u>responsible</u> for 2.7 million tonnes of emissions annually alone, but their products are also the key enabler of intensification of dairy farming. Phasing out synthetic nitrogen fertiliser can reduce emissions of nitrous oxide that fertilisers release, reduce the CO2 produced by manufacturing them, and accelerate the shift to de-intensifying farming, which will ultimately reduce methane significantly too. Many regenerative and organic farmers are already doing this. Pairing this with the support and advice for farmers to transition to producing higher value food and fibre is key to enable a just transition.

**Establish transition hubs and a \$1 billion regenerative farming fund.** <u>Business leaders</u> have called for local 'Regeneration hubs' or transition hubs for '<u>sunrise sectors'[i]</u>. These hubs will make sure farmers have all the information and choices available to them to shift production modes, and get funding for regenerative, organic extension services. They also call for linking these hubs to government funded 'transition banks' with revolving loan schemes, and other appropriate finance to de-risk the transition for farmers.[ii] Similarly, <u>Greenpeace argues</u> for 3-year grant funding for farmers undertaking changed practices, as part of their \$1 billion regenerative farming fund proposal, to allow farmers to gain experience in them.

In addition, we also propose:

**Incentivise the transition of rural land use to plant-based agriculture**. Rather than wasting billions of dollars on buying offshore credits, we could reduce the single largest sources of emissions by paying dairy farmers to stop dairying and switch to lower-emissions forms of agriculture, including plant-based agriculture.

#### Give Our Nature a Voice

We call on the Government to recognise:-

- Nature is our best option to help combat climate change and we need to invest heavily in protecting our endemic biodiversity in order to save many of our endangered species.
- Native forests are our best choice as carbon sinks.
- It is totally unacceptable to cover our farmland and landscapes with exotic species such as pines, eucalypts and fir species which often lead to wilding species on adjacent land.
- We need to be allies with nature, working in a 'symbiotic' relationship as opposed to a confrontational attitude.
- It is imperative that we invest in planting more native species here in NZ as opposed to relying on other countries to plant as offsets for our climate mitigation. It is an outrage to even suggest this when our own endemic forests need huge investment in order for them to survive- they are under huge threat from introduced pest species-both flora & fauna. In many native forests the pests have destroyed all chance of regeneration by destroying seedlings. They cannot continue to be our carbon sinks in this state- look to our own with investments for carbon sinks.

#### Transport

I live in a small country town and on principle either walk or ride my bike to do all in town tasks. I am in the process of buying a small hybrid car to cut emissions.

I love it when I go to our larger cities to visit whanau or attend meetings, that I can use public transport of light rail, buses, cable cars along with walking precincts. My Gold Card further enables this! My friends who live in those cities marvel at the way I get around without a car! I encourage them to do the same!

#### We call on the Government to :-

- Ensure at least a 20% reduction in car journeys (VKT) by 2030, and at least a 30% reduction by 2035.
- Fund pedestrian and cycling improvements at a scale similar to England's Walking and Cycling Plan or follow Ireland's lead and allocate 10% of the total transport capital budget for pedestrian infrastructure, and a further separate 10% for cycling projects.
- Bring forward the timeframes for constructing light rail in Wellington and Auckland to to have them completed within this decade. Choose the most cost-effective options to free up more funding for other public transport improvements
- Provide free public transport for community service card holders, under 25s and tertiary students in line with the calls from the Aotearoa Collective for Public Transport Equity, fully funded by central government in Budget 2022
- Bring public transport back into public ownership to improve driver pay and conditions, so that services can be easily expanded.

#### Grow & eat local

I grow almost all my own vegetables and am largely vegetarian, encourage others to do the same, organise a garden at the local school to encourage students and teach them about gardening. My lawns have been replaced with native trees & shrubs so decreasing lawn mower use and increasing biodiversity. Other members of CAM practice these principles in their own lives as well, along with their whanau.

#### We call on the Government to recognise that :-

Our entire food system needs a major overhaul.

Climate change is already having a major impact on our food supply, with floods, storms and drought occurring with increasing regularity.

Our agricultural sector favours exports over domestic supply, when feeding ourselves should be the first priority.

The Commerce Commission's exposure of our failing food systems should spark a deeper conversation about what defines a truly sustainable, equitable and secure food supply. Rather than introducing another supermarket chain to challenge the duopoly, we should be focusing on:-

- Supporting localised food distribution and produce sharing through farmers' markets and
- community hubs as the most obvious competition to the supermarket model.
- Supporting smaller local food processors (grain mills, cheese makers).
- Teaching and mentoring the skills of home & community gardening through multiple forums (schools and communities).
- Supporting smaller, mixed farms that apply regenerative and organic practices.
- Make more public/council owned land available for food growing enterprises.

- Removing the bureaucratic impediments for small scale producers and innovative practices.
- Reducing stock numbers and promoting plant- based diets.
- Encouraging and celebrating regional food differences by growing what is best suited to a region.
- Encouraging diversity and seed saving. A resilient food system is underpinned by having options of what can be grown in changing environments and weather patterns.
- Promoting seasonal eating habits domestically and in restaurants. By accepting that we cannot access all foods year-round, will substantially reduce food miles and so carbon emissions.
- Supporting domestic and community gardens in urban environments.

#### **Carbon Credits- Trading**

The strategy of buying and selling "carbon credits" can lead to a new form of speculation which would not help reduce the emission of polluting gases worldwide. This system seems to provide a quick and easy solution under the guise of a certain commitment to the environment, but in no way does it allow for the radical change which present circumstances require. Rather, it may simply become a ploy which permits maintaining the excessive consumption of some countries and sectors.

Strategy! Here is an imaginative way to live differently – Mike Joy proposed this at the Environmental Defence Society Conference in August 2021

(<u>https://vimeo.com/user33383507</u>): pay dairy farmers \$1 billion/year to stop dairying (or rather reduce cow numbers). Coincidentally the same amount the Methane Reduction Plan is proposing to pay another country for carbon credits.

#### **Emissions pricing**

#### We call on the Government to:-

- Sharply increase the ETS floor price so that it reaches at least \$250/tonne by 2030
- Recycle ETS revenue to reduce energy poverty and support decarbonisation, especially of hard-to-abate industries
- End Government "circuitbreaker" supply of additional credits into the ETS when price benchmarks are reached
- Bring Agriculture into the ETS at the processor level from 2022
- Phase out the industrial allocation under the ETS by 2030 at the latest. Accompany this with R&D funding and just transition planning for hard to abate sectors like steel.
- Give the Climate Commission independent powers to influence the price of emissions.
- Reform ETS through appropriate regulatory oversight, changes to free allocations and forestry, and strategic use of ETS revenue in line with a just transition.

#### **Buildings and infrastructure**

#### We call on the Government to

• Accelerate the Building for Climate Change Programme by fully adopting the recommendations of the Green Building Council to achieve zero carbon buildings by

2030, and a deep retrofit of existing housing stock, including requirements for improving accessibility of housing at the same time

• Establish a Ministry of Green Works along with accompanying significant funding to iwi, hapū and Māori entities in the tino rangatiratanga sphere, as recommended by First Union, to enable government and Māori to have the levers they need to pull to reduce emissions at the same time a tackling the housing and infrastructure crises.

#### Government accountability and coordination

#### We call on the Government to:-

• Add a metric to monitor the international: domestic offsetting balance, and develop a plan to phase out international elements by 2030

#### Waste and plastic pollution

#### We call on the Government to:-

- Look at emissions from a consumption perspective, not only a production perspective.
- Equitable transition, incentivising circular business models, Tiriti-led approach
- Get organics out of landfill to reduce methane, promote healthy soils, encourage regenerative farming
- Set up zero waste government agency
- Reduce plastic use- especially in wrapping and use natural products instead eg paper.
- Encourage use of organic waste as compost to enrich soils.
- Raise awareness of healthy soils with worms and natural products end end the use of artificial fertiliser.
- Continue drive to reduce plastic pollution in your rivers, lakes & oceans.
- Make large industries responsible for their often toxic waste.
- Support local initiatives to recycle & reduce waste eg wastebuster groups, Council schemes
- Encourage individuals to reduce waste at home & at work.
- Zero Waste is our aim!

#### Climate education.

I am a retired secondary Biology teacher but continue to educate people about Climate Change and its impacts through conversations, webinars, Zoom calls & in all the community groups in which I am involved. After I retired from teaching I set up and convened the Invercargill Environment Centre, Te Whenua Awhi in 2001 and continued this until 2018, all the while educating the community about all aspects of care for the environment through practical actions which they could take, both as groups or individuals.

Other members of CAM are also involved in education across all levels and are supporting educational programmes in both schools, polytechnics and communities.

#### We call on the Government to recognise that:-

Educators are Crucial in a Low Carbon Future 1. Upholding tino rangatiratanga

- 2. Pacific Islands communities in a Just Transition
- 3. The role of climate change education in a low-carbon, Tiriti-responsive society
- 3a. A clear climate education action plan from government
- 3b. Greater domestic investment and overseas support
- 3c. Integration of climate change education into all learning areas and age levels
- 3d. Initial Teacher Education and continuing professional development
- 3e. Teaching and learning resources for climate change education
- 4. Decarbonising the education sector

#### Health effects of Climate Change

# We call on the Government to recognise that health is affected by so many factors and so needs to :-

- Address clear inadequacies in agriculture and food systems. Recommend following the Climate Change Commission recommendation to reduce herd size and stocking rates.
- Scale up NDC from 7-9% to 50% on a net-net basis.
- Make health at the heart of the plan & policies
- Strengthen Te Ao Māori agency, and te tiriti-based representation
- Invest in urgent climate emission cuts here in Aotearoa now, instead of offsetting.
- Prioritise measures which will reduce vulnerability and make low emissions living easy and affordable for all.
- Address mental health issues of anxiety by involving people in eg Back to Nature Projects so they feel they are making a difference, social interaction & building community alongside resilience- to empowerment.

#### Local engagement

#### We call on the Government to recognise that:-

Culture change happens via engaged community action. Culture change is necessary to get Aotearoa to net zero much quicker than the proposed ERP (which is too slow to reduce drastic climate change). Communities mostly lack knowledge and expertise to become leaders on this culture shift - but an ERP must address this and engage communities as vital stakeholders. The discussion document *Accelerating climate action: the role of in-country local leadership networks in delivering Net Zero* November 2021 prepared by (Damian Ryan, RCP Consulting for UK100)

https://www.uk100.org/sites/default/files/publications/Accelerating%20climate%20action-NoN-Final-10th%20Nov.pdf )

outlines the importance and influence of local leadership in directing community action.

#### **Personal Commitments**

We call on the Government to seek and encourage our team of 5 million to:-

- Make a commitment of personal efforts by everyone in homes & offices, which in turn raises awareness of other actions which each of us can take to make a difference.
- Celebrate that our 5 million bubble has already proven that when we work together with kindness we make enormous changes for the better for people, other living beings and the good of our planet.
- Change our thinking to 'using less is better'! An easy & simple way to conserve energy.
- Encourage 'de-growth' principles in recognition of our planet's bio-physical incapacity to deal with our increasing demand for 'more'.
- Support Just Transition principles as many essential changes are made in order for industries to change to a low carbon future, for the sake of our planet and future generations of all life.
- Call on the Government to be accountable as they take actions to reduce carbon emissions.
- Pass all policies through a carbon & Climate change lens.
- Pass all policies through a Tiriti o Waitangi lens

Nau to rourou, naku te rourou, ka ora te iwi.

From your food basket and my food basket, there is sufficient for everyone.

Kia kaha- be strong and take urgent action- we expect it of you! Rangimarie,

Jenny Campbell QSM for the Environment

And on behalf of CAM ( Coal Action Network ) members.

From:Joanie BartelsTo:climate consultation 2021Subject:Emissions Reduction PlanDate:Tuesday, 23 November 2021 9:48:51 pm

## **MFE CYBER SECURITY WARNING**

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

I would like to see the following initiatives added into the Emissions Reduction Plan:

#### **Emissions Pricing**

• Phase out the industrial allocation under the Emissions Trading Scheme much faster than currently planned, with all free allocation gone by 2030 at the latest. Accompany this with R&D funding and just transition planning for hard to abate sectors like steel

#### Agriculture

- Price agricultural emissions in the Emissions Trading Scheme at the processor level from 2022, with far less than the planned 95% free allocation
- Phase out of synthetic nitrogen fertiliser by 2030
- Establish transition hubs in line with the recommendations of the Aotearoa Circle's Fenwick Report and a \$1 billion regenerative farming fund, in line with Greenpeace's policy briefing

#### Transport

- Set a target to reduce VKT by 20% by 2030
- Fund pedestrian and cycling improvements at a scale similar to England's Walking and Cycling Plan
- Bring forward the timeframes for constructing light rail in Wellington and Auckland to to have them completed within this decade. Choose the most cost-effective options to free up more funding for other public transport improvements
- Provide free public transport for community service card holders, under 25s and tertiary students in line with the calls from the Aotearoa Collective for Public Transport Equity, fully funded by central government in Budget 2022
- Bring public transport back into public ownership to improve driver pay and conditions, so that services can be easily expanded

#### Energy

• Takeover the running of Tiwai Point Aluminium Smelter in 2024 following Rio Tinto's exit, running it at half capacity, and using the remaining electricity to help decarbonise food processing, schools, hospitals and small industry in the South Island, as called for by Jeanette Fitzsimons before her passing

#### **Buildings and infrastructure**

• Accelerate the Building for Climate Change Programme by fully adopting the recommendations of the Green Building Council to achieve zero carbon buildings by 2030, and a deep retrofit of existing housing stock, including requirements for

improving accessibility of housing at the same time

• Establish a Ministry of Green Works along with accompanying significant funding to iwi, hapu and Maori entities in the tino rangatiratanga sphere, as recommended by First Union, to enable government and Maori to have the levers they need to pull to reduce emissions at the same time a tackling the housing and infrastructure crises

Sincerely & hopefully Joanie Bartels



| From:    | John-Paul Praat                        |
|----------|--|
| To:      | climate consultation 2021              |
| Subject: | submission on emissions reduction plan |
| Date:    | Wednesday, 24 November 2021 5:03:03 pm |

#### **MFE CYBER SECURITY WARNING**

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Hi there. Apologies as I do not have time to digest and comment on the whole plan. I have submitted in the past. I have some ideas which will impact across a range of sectors so was hesitant to click on a specific sector as I expect that resilient practical solutions will need to work cross-sector.

There is some concern over the ETS promulgating/ facilitating inappropriate landuse change (pine over pasture). The system is somewhat stacked against appropriate landuse change in that is easier to register obvious grassland (well managed weed free pasture) than marginal ie land with emerging weed or forest species. This often gets deemed as p90 when in fact management was changed post Jan 90 from grazing to retirement. The registration process does not recognise this well. Consequently the better the pasture the easier the registration process is. To encourage marginal land conversion this needs to be better managed from the registration point of view. Maybe even where good imagery shows high or low producing grassland is being registered a restriction is added eg must be exotic other than radiata pine or native and / or permanent forest.

In terms of a cross sectoral solution recognising the embodied carbon sequestration in timber (value back to landowner), especially in construction and putting a higher cost on the embodied carbon emissions involved in producing steel and concrete to encourage (force maybe even) using more timber in all buildings. This would deliver higher value back to existing forest owners and encourage planting. Recognition of sequestered carbon in a timber building should be apply / be available to all timber species including other exotics like douglas fir, cypress, eucalyptus, redwoods and western red cedar to help develop alternative market supply chains to radiata pine, especially as these alternative species do not necessarily require chemical treatment for above ground use.

NZUs from permanent forest (P89) are tagged as such, perhaps the addition of a "Biodiversity credit", based on the NZU measurement unit, which would increase the value of particular NZUS. These could also potentially be made available p90 native where a change in management (pest weed and animal control/enrichment planting) can be demonstrated ie outside business as usual. Biodiversity credits could encourage landowners to protect (fence) existing native bush, control pest weeds and plants, and carry out enrichment planting (the 3 Ps of native restoration).

Farmers will do it if they can get it paid for which fair as everybody benefits from biodiversity protection and enhancement.

Regards JP --

John-Paul (JP) Praat

groundtruth
www.groundtruth.co.nz 104 Turere Lane, Te Awamutu

and PO Box 52, Paekakariki, NZ

#### Submission on the Government's Emissions Reduction Plan

To Prime Minister Jacinda Ardern,

The Government's document about an Emissions Reduction Plan to tackle climate change lacks coherence. The Government has said nature-based solutions are a priority but doesn't seem to know what they are. Emphasis seems to be on transport solutions. These will have little impact on the majority of New Zealanders who own a perfectly good oil based vehicle likely to last many years, many recently bought as a result of the Government's actions.

Our forests, wetlands, mangroves, well-maintained topsoils, and oceans are all vital carbon sinks, as well as home to many thousands of unique species critical for keeping these ecosystems intact. But they are being destroyed by browsing mammals, introduced plant species, unsuitable farming and horticultural practices and, especially the oceans, increased CO<sup>2</sup> and increased warming. Protecting and enhancing all of these ecosystems could help keep climate warming to safe levels with nature-based solutions that are practical, achievable, and can help us solve the climate and biodiversity crises together.

I ask that you put biological ecosystems at the heart of New Zealand's climate response:

- **Protect and restore existing carbon sinks:** The huge amount of carbon stored in our forest, wetland, mangroves and ocean habitats should be safeguarded by policies including a blitz on invasive plant species, an end to bottom trawling, mangroves protection, rewetting peatlands, and banning all future wetland destruction.
- Incentivise native habitat restoration: Instead of paying other countries to replant their milled forests we should be supporting New Zealanders to plant new native forests and restore wetlands to store carbon, stop erosion, and provide habitat for birds. The National Policy Statement on Indigenous Biodiversity needs to be finished to prevent destruction of forests and wetlands too.
- **Expand browsing animal and browsing pest control:** Controlling browsing pests could offset up to 15% of New Zealand's net emissions, as well as preventing new plantings from being destroyed. Possums, feral deer, goats, and pigs should be controlled or preferably culled completely, on all public land.
- Do not incentivise the planting of PINE trees of any sort. Under global warming most are capable of spreading widely costing more for taxpayers than achieved through taxes. Instead create incentives for planting much higher value timber trees, including mixed species and possibly combined with another crop. For example chestnut trees produce ground durable logs in 30 40 years as they produce very little sap wood. Growing these would result in fewer imports from tropical forests (which may not be possible in a few years anyhow) *and* reduce the requirement for chemical preservatives.
- **Put agriculture in the Emissions Trading Scheme:** New Zealand's largest single source of emissions needs strong incentives to act on climate change. The Government needs to work with farmers to reduce their impact on the climate. That means doing things like:
  - Supporting farmers to adopt regenerative farming practices that restore soil, water, and air quality, including funding to help them do this.
  - Phasing out the use of synthetic nitrogen fertiliser, which has fuelled the growth in dairy cow numbers over the past three decades. Incentivise the use of clovers again –we export for example \$10-14 million of white clover seed annually and that is just one of the clovers grown; why import artificial N fertilizer at all?
  - o Reduce dairy cattle herd size by increasing the value of products made from cow's milk.

- Allow farmers to offset carbon emissions by fencing off native bush and marginal land on their property and from the planting of riparian strips. This will also help clean up our rivers and protect communities from floods.
- Developing a fair system for the industrial agriculture industry to pay for its emissions, like all other sectors of the economy have to through the Emissions Trading Scheme.
- Cutting emissions in energy: We need to rapidly decarbonise our energy systems.
  - New coal mines need to be stopped now, to avoid locking in high greenhouse gas emissions for decades to come.
  - Urgently end all coal use for industry and electricity generation. The Government should lead the way by making all schools, hospitals, and other government buildings, 100% powered by clean energy by 2025.
  - Change the rules and provide incentives for people and communities to install solar panels and batteries in their homes, on marae and community centres.
  - Work with households and businesses on energy conservation and efficiency, so we use less energy overall.
  - Ban all new fossil fuel electricity generation, including fossil gas, and build wind and solar instead.
  - Work with the energy industry and education providers to develop a clean energy industry training plan, so thousands of people can easily get training in the skills to install solar panels and other clean energy jobs.
  - I would like the Minister of Transport to build more safe footpaths and cycle-lanes, especially near schools so young people can walk and cycle to school safely.
  - I would like the Minister to set up a programme where people can trade in old, polluting cars and receive discounts on clean transport alternatives like e-bikes.
  - I would like the Minister to invest in light rail in our major cities and faster trains between cities so people have an alternative to flying.

## • Honouring te Tiriti o Waitangi

The Crown has a duty to actively protect Māori rights, interests, whenua and taonga. This includes ensuring that Māori have autonomy in the management of their whenua and their capacity to act as kaitiaki. Māori also have significant interest and investment in agriculture, forestry, and fisheries which are all areas that will be affected significantly by emissions reductions and the changing climate. Māori employment in these areas is high and this will need to be considered as effects on the Māori economy could increase unemployment and reduce income, if they are not well managed. Considering that Māori land has historically been exploited to benefit the New Zealand economy, the transition to zero carbon must avoid continuing this. Factors such as where infrastructure will be established, such as that of renewable energy, are relevant to this.



24 November 2021

Ministry for the Environment Email: <u>climateconsultation2021@mfe.govt.nz</u>

## TE HAU MĀROHI KI ANAMATA: TRANSITIONING TO A LOW-EMISSIONS AND CLIMATE-RESILIENT FUTURE

Kāpiti Coast District Council (Council) appreciates the opportunity to submit on *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future*. Council recognises the importance of New Zealand's first emissions reduction plan and is committed to working alongside all New Zealanders to achieve a low-emissions future.

Council is proud to have been the first local authority to be CEMARS certified in 2012.<sup>1</sup> Council has reduced its greenhouse gas emissions by 78% since 2010, and received numerous awards for these efforts, including being named top carbon reducer in Toitū Envirocare's 2020 rankings.

During this same time, Council has also funded a wide range of projects to support and enable districtwide emissions reductions. Despite these efforts, however, net emissions for the Kāpiti Coast District rose by 43%, from net 200,801 tCO<sub>2</sub>e in 2001 to net 286,560 tCO<sub>2</sub>e in 2019.<sup>2</sup> While agriculture, stationary energy and waste emissions reduced (by 41%, 8% and 4% respectively), transport and industry emissions increased (by 40% and 445% respectively). The increase in transport emissions was the largest real change in emissions, rising by 57,059 tCO<sub>2</sub>e. This is discussed further in the section on transport.

Our submission draws on the lessons we have learnt to, not only respond to the questions posed in the consultation document, but to also (i) provide examples illustrating how organisations like ours can successfully reduce their corporate emissions and (ii) suggest a number of actions central government can take to support local government in encouraging emissions reductions at the local level.

Council contends that local government has an important role in helping Aotearoa meet its targets, but further support and funding from central Government is required to enhance local government's ability to promote and enable mitigation at a local level.

<sup>&</sup>lt;sup>1</sup> At the time, CEMARS (Certified Emissions Measurement and Reporting Scheme) was administered by Enviro-Mark Solutions. Today the programme is now called 'CarbonReduce' and the annual auditing is carried out by Toitū Envirocare.

<sup>&</sup>lt;sup>2</sup> AECOM, 15 May 2020, Kāpiti Coast District Greenhouse Gas Inventory. All districtwide emissions cited in this submission are from this report.

While the *Te hau mārohi ki anamata* consultation document recognises the need to 'empower central and local government, iwi/Māori, communities and businesses' (p18), it appears to overlook the opportunities available through the well-established linkages between local government, businesses, and communities. As local government must continuously engage and consult to define and deliver its services, these lines of communication are well formed.

Council supports the submissions made by the Wellington Region Climate Change Forum, the Wellington Region Transport Committee, the WasteMINZ TA Forum, the other Wellington region councils, Local Government New Zealand (LGNZ), and Taituarā.

Council would be pleased to speak to our submission if there is an opportunity to do so.

Yours sincerely



K. Gurunathan JP, MA MAYOR, KĀPITI COAST DISTRICT

# Kāpiti Coast District Council submission on *Te hau mārohi ki anamata: Transitioning to a low-emissions and climate-resilient future*

1. Our submission is structured according to the headings and sub-headings from each section of the consultation document. While our response aims to speak to the questions in the consultation document, we have not answered every question posed.

## Meeting the net-zero challenge

## Transition pathway / Helping sectors to adapt

- Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above, the correct ones? Please explain why or why not.
- How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?
- In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?
- How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?
- Are there any other views you wish to share in relation to the Transition Pathway?
- Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?
- Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?
- 2. On 29 July 2021, Kāpiti Coast District Council adopted a Climate Action Framework (as shown in Appendix 1 to this submission). Like the guiding principles proposed in *Te hau mārohi ki anamata*, the Framework's primary objective is to embed considerations of climate change across the organisation and guide Council decision-making.
- 3. Our Climate Action Framework consists of 10 principles.<sup>3</sup> A comparison between our Framework and those proposed in *Te hau mārohi ki anamata* shows considerable overlap but there is, however, one principle that sits within our Framework that does not sit in the guiding principles for the emissions reduction plan i.e., *sustainability, resilience, and climate change-related work is integrated and coordinated across Council.*
- 4. In response to the question about how Government can enable further private sector action, this additional principle is important because one of the most important steps that Government can take is to support local government bodies, who in turn support local communities and businesses, and one of the best ways to do this is to increase alignment across Government. Because today's New Zealand faces a wide range of challenges the

<sup>&</sup>lt;sup>3</sup> Note that our Framework covers both mitigation and adaptation and some of the principles are only appropriate for local government bodies.

changing climate, the COVID-19 pandemic, and the affordable housing crisis, to name but a few – it is critically important that Government be integrated and coordinated. Council acknowledges this is not an easy task.

- 5. Local government bodies can easily become caught between conflicting mandates, which has flow on effects to local communities and businesses. A perfect example is the recently announced Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill. While this Bill is projected to increase much-needed housing supply, it creates additional challenges for local government bodies. As an example, because transport emissions are by far the greatest source of emissions in the Kāpiti Coast, housing intensification along key public transport nodes is critical for emissions reductions in this District, whereas this Bill is designed to permit intensification broadly across all urban areas. This is particularly problematic for Council because in some instances we do not want to encourage intensification in areas that are not close to key transport nodes.
- 6. While Council acknowledges the need for affordable housing in the District, it is important that new builds do not further exacerbate the challenges we face. As many of our existing neighbourhoods were built without consideration to low-emissions living, we do not want to add to those developments without addressing greenhouse gas emissions, environmental quality, and risk and resilience at the same time. Two principles of our Framework that speak to this are:
  - a. Avoiding any actions that might worsen inequity or <u>compromise future generations</u>; and
  - b. Long-term effectiveness of proposed actions, <u>regardless of current or future trends</u> or pressures.
- 7. The National Policy Statement on Urban Development 2020 and the Wellington Regional Growth Framework acknowledge this need to intensify housing at public transport nodes. Our proposed approach to enabling growth has suggested a more nuanced approach to where and how development should occur, and this has now been partly overridden by the Bill. If New Zealand is to reach its emissions reduction targets, a fully aligned, whole-of-Government response is required.

## Working with our Tiriti partners

- The Climate Change Commission has recommended that the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. Which, if any, of the strategies listed are a particular priority for your whānau, hapū or iwi and why is this?
- What actions should a Māori-led transition strategy prioritise? What impact do you think these actions will have for Māori generally or for our emission reduction targets? What impact will these actions have for you?
- What would help your whanau, community, Māori collective or business to participate in the development of the strategy?

- What information would your Māori collective, community or business like to capture in an emissions profile? Could this information support emissions reductions at a whanau level?
- Reflecting on the Commission's recommendation for a mechanism that would build strong Te Tiriti partnerships, what existing models of partnership are you aware of that have resulted in good outcomes for Māori? Why were they effective?
- 8. As the questions in this section are specifically directed towards Te Tiriti partners, Council has shared *Te hau mārohi ki anamata* with our Iwi Relationships Team so they could ensure that our iwi partners were aware of this consultation opportunity. Council supports all submissions made by the iwi and hapū of the Kāpiti Coast District.

## Making an equitable transition

- Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission (partnership with iwi/Māori, proactive transition planning, strengthening the responsiveness of the education systems, supporting workers in transition, and minimising unequal impacts)? What additional objectives should be included?
- What additional measures are needed to give effect to the objectives noted by the Climate Change Commission and any other objectives that you think should be included in an Equitable Transitions Strategy?
- What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?
- How can Government further support households (particularly low-income households) to reduce their emissions footprint?
- How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?
- What additional resources, tools and information are needed to support community transition planning?
- How could the uptake of low-emissions business models and production methods be best encouraged?
- Is there anything else you wish to share in relation to making an equitable transition?
- 9. In principle, Council supports the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission and agrees that such a strategy must be co-designed alongside iwi/Māori, local government, regional economic development agencies, businesses, workers, unions, the disability community, and community groups.
- 10. As time is of the essence to develop and implement the Equitable Transitions Strategy, Government should not overlook the well-established linkages between local government, businesses, and communities. As local government must continuously engage, consult, and collaborate to define and deliver its services, local government bodies are very well placed to serve as partners in the <u>co-design</u> process.

- 11. Council notes that the four focus areas for the transition are reducing risks for firms and households; promoting business and job opportunities; supporting workers, households, and communities through the transition; and monitoring impacts and responding as they emerge. Due to the focus on local businesses and communities, local government also has an important role to play in the <u>implementation</u> of the strategy, although additional funding from central Government will be required so this can happen.
- 12. Additional funding and support is also required to enhance local government's ability to promote and enable mitigation at a local level. The Kāpiti Coast districtwide emissions reduction experience illustrates this point. In the Kāpiti Coast, the largest contributor to the districtwide emissions inventory in 2019 was transport emissions (56.9% of the District's total gross emissions), followed by stationary energy (17.0% of the District's total gross emissions).
- 13. Table 1 outlines the stationary energy gross emissions by sub-categories, while transport emissions are discussed in more detail later in this submission. For all stationary energy emissions:
  - a. Industrial consumption accounted for 42%
  - b. Residential consumption accounted for 22%
  - c. Commercial consumption accounted for 17%
  - d. Diesel and petrol (that was not allocated to another category) accounted for the remaining 19%.

| Sector                         | tCO <sub>2</sub> e    | % Gross | % Sector |
|--------------------------------|-----------------------|---------|----------|
| Electricity Consumption        | 27,982                | 8.0%    | 47.0%    |
| Electricity T&D Loss           | 2,298                 | 0.7%    | 3.9%     |
| Natural Gas                    | 10,797                | 3.1%    | 18.1%    |
| Natural Gas T&D Loss           | 1,718                 | 0.5%    | 2.9%     |
| LPG                            | 3,707                 | 1.1%    | 6.2%     |
| Stationary Petrol & Diesel Use | 11,329                | 3.2%    | 19.0%    |
| Coal                           | 857                   | 0.2%    | 1.4%     |
| Biofuel / Wood                 | 880                   | 0.3%    | 1.5%     |
| Total:                         | 59 <mark>,</mark> 568 | 17.0%   | 100.0%   |

 Table 1: Gross emissions for Stationary Energy and associated sub-categories. 2019

Source: AECOM. 15 May 2020. Kapiti Coast District Greenhouse Gas Inventory.

14. Between 2001 and 2019, emissions from stationary energy reduced in number and as a proportion of total gross emissions – 64,708 tCO<sub>2</sub>e (20% of total gross emissions) in 2001 compared to 59,568 tCO<sub>2</sub>e (18% of total gross emissions) in 2019, a fall of 8%. Emissions from residential stationary energy consumption shrank the most, by 24%. Emissions from commercial and industrial stationary energy consumption also decreased over this time (by 22% and 14% respectively).

- 15. The main changes in these stationary energy emissions are explained most noticeably by changes in electricity, natural gas, petrol and diesel use. Emissions from electricity reduced by 24%, largely due to changes in the mix of fuels used for electricity generation in New Zealand (i.e. the greater use of renewable energy, rather than fossil fuel). Emissions from natural gas reduced by 3%, but petrol emissions increased by 28% and diesel emissions increased by 118%.
- 16. The key message here is that most of these reductions in stationary energy were "due to changes in the mix of fuels used for electricity generation" <u>rather than changes in behaviour in energy consumption</u>. This is considerably different than Council's experience with its own corporate greenhouse gas emissions.
- 17. Council has reduced its greenhouse gas emissions by 78% since 2010, and much of this reduction has occurred through real changes to our infrastructure and operational practices. To achieve this, Council has undertaken a range of actions to:
  - a. Transition infrastructure and operational practices to renewable energy sources (e.g., solar energy for processing wastewater, lighting libraries, and heating pools);
  - b. Upgrade our buildings, switch our fleet (to EVs), and change our behaviours to improve energy efficiency, use renewable energy, and reduce waste; and
  - c. Where possible, reduce demand on infrastructure (e.g., the introduction of water meters coupled with water sustainability education has helped to reduce demand on our water distribution network, and this has led to energy savings).

Appendix 2 provides more detailed information on many of these actions, including the emissions reductions achieved from each change.

- 18. While our District undoubtedly has eco-minded residents and business owners who are purchasing more energy efficient products and modifying their homes or businesses to be more energy efficient, there is still considerable work to be done to support commercial and industrial operations as well as most homeowners and renters.
- 19. The consultation document refers to existing measures such as the Warmer Kiwi Homes programme or the Sustainable Business Network Climate Action Toolbox (p28). Central government funding schemes are a good first step to encourage behaviour change. Councils alone could not fund such programmes at scale, but councils could partner with Government to promote and implement such programmes at a local level. A rebate scheme for solar panels similar to the Warmer Kiwi Homes programme is needed. In addition, more funding is required for local EV charging stations, as the rebate scheme for EVs will encourage greater EV uptake.<sup>4</sup>

<sup>&</sup>lt;sup>4</sup> In 2018, Council partnered with Horowhenua District Council, Electra and ChargeNet and successfully applied to the Energy Efficiency and Conservation Authority's Low Emission Vehicle Contestable Fund to install eight electric vehicle (EV) fast chargers across Kāpiti and Horowhenua. Installing fast chargers in Kāpiti town centres

- 20. In terms of supporting businesses, Council is particularly interested in programmes to help emissions-intensive businesses move to new operating models; working with businesses to reduce their emissions profile; and training programmes to prepare employees for lower-emissions jobs. Council is pleased to see that Government has already identified some of these issues and intends to consider them further during the first budget period (p29).
- 21. Council is keen to work with Government to make these types of programmes available to our local business community and is hopeful that the reform of Vocational Education and the establishment of the New Zealand Institute of Skills & Technology will provide improved opportunities for our District. Our Economic Development Strategy highlights the need for improved training and local investment. Limited tertiary facilities in our District mean that rangatahi who are just entering the workforce, and existing workers who would like to retrain, commonly must travel outside of our District for training and tertiary education.

## Aligning systems and tools

#### Government accountability and coordination

- In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?
- How can new ways of working together like mission-oriented innovation help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climate-resilient economy?
- Is there anything else you wish to share in relation to government accountability and coordination?
- 22. As discussed above in response to the question about the key barriers Government could remove to support decarbonisation (see paragraphs 4-7), cross-Government alignment to ensure consistency in legislation and mandates is one of the most important things required to support local government bodies. Council is pleased to see that 'making sure social, economic and environmental policies support one another' is already identified in the consultation document as a key requirement (p32).

#### **Funding and financing**

- What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?
- What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?
- What else should the Government prioritise in directing public and private finance into lowemissions investment and activity?
- Is there anything else you wish to share in relation to funding and financing?

helps support the uptake of EV's while also supporting local businesses, which will benefit from EV driver's custom.

- 23. Three barriers that are likely affecting the flow of private capital into low-emissions investment are: (i) a general lack of understanding about low-emissions investment; (ii) concerns about the impact of low-emissions investment on profits; and (iii) a lack of incentives to make such a transition.
- 24. In general, more information is needed to help private investors understand what constitutes low-emissions investment, why it is needed, and how it can be done. Improved guidance on how to make this transition without having a negative impact on people's livelihoods is crucial. Initiatives that help to channel private investors towards low-emissions investment opportunities (e.g., New Zealand Green Investment Finance Limited (NZGIF) and the Regional Strategic Partnership Fund) are a great start.
- 25. In order to reach net-zero, the largest transition must come from industry and agriculture. While there are many examples of innovation starting to occur, regulations that require these investments might be needed to encourage a faster transition.
- 26. If central government genuinely wants to empower local government (as discussed on p18 of the consultation document), more funding to local government is required. There are many programmes and services that local government could provide to enable mitigation in local businesses and communities, but most territorial authorities cannot do this without being funded to do so.

## **Emissions pricing**

- Do you have sufficient information on future emissions price paths to inform your investment decisions?
- What emissions price are you factoring into your investment decisions?
- Do you agree the treatment of forestry in the New Zealand Emissions Trading Scheme (NZ ETS) should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?
- What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider to ensure we do not unnecessarily restrict forest planting?
- Are there any other views you wish to share in relation to emissions pricing?
- 27. For Council's investment decisions, we rely on the NZ ETS price controls. Council uses the price controls to measure the cost-effectiveness of proposed projects to lower emissions in comparison with purchasing the same volume of carbon credits on the market.
- 28. In order to meet the net-zero target, Council feels agriculture needs to be brought under the NZ ETS in order to incentivise low-emissions investment (as discussed in paragraph 25 above).

#### Planning

- In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.
- What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?
- Are there any other views you wish to share in relation to planning?
- 29. Land-use planning is a key component of the net-zero transition pathway. Current legislative reforms must not compromise local government's ability to develop and implement plans on behalf of its communities, especially when these plans aim to enable a low carbon economy while also enabling environmental protection and restoration.
- 30. As discussed in paragraphs 5-7 above, while the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill is projected to increase much-needed housing supply, it could inadvertently encourage housing intensification in areas that are not near public transport nodes. This could then lead to increased greenhouse gas emissions as the residents in these new houses would be more likely to rely on private vehicles.
- 31. It is also important that sufficient support, information, and advice be provided at a national level to assist local decision makers. Local government should not be in the position where each local body must re-create the same evidence base to support a course of action (or prepare to face a legal challenge), especially when this course of action is consistent with a national emissions reduction plan.
- 32. Moreover, new legislation should not only support councils to develop land-use plans to support the Transition Pathway, but also provide councils with a wide range of tools and supports to enforce these plans. For example, the National Policy Statement on Urban Development 2020 acknowledges the need to intensify housing at public transport nodes. This principle is consistent with the Wellington Regional Growth Framework and the direction of our Kapiti Growth Strategy, which is helping to shape our planning for a forecasted population increase of 30,000 by 2051. Local governments must be well supported to plan appropriately and 'hold the line' to ensure that growth occurs in a way that supports the net-zero transition pathway. Councils also need to be supported with an effective public transport network to ensure that population growth doesn't continue to drive up private transport related emissions.
- 33. The same applies to the question about how the emissions reduction plan can promote nature-based solutions that are good for both climate and biodiversity. If 'nature-based solutions that are good for both climate and biodiversity' are truly the intention of central government, then this principle must start at the national level and be carried through

regional levels down to local levels, where local governments will be supported to see this put into practice. Without this support, local government cannot guarantee this outcome.

## Research, science and innovation

- What are the big challenges, particularly around technology, that a mission-based approach could help solve?
- How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?
- What opportunities are there in areas where Aotearoa has a unique global advantage in lowemissions abatement?
- How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?
- What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?
- Are there any other views you wish to share in relation to research, science and innovation?
- 34. As Council has learned from its own emissions reduction experience, it is important to focus on innovation that creates enduring change. Council's success in emissions reduction has been due to real change in building designs and operational practices, which has meant that most of the changes have endured over time. While there are many examples of best practice from overseas, often more work is required to fit those ideas to the New Zealand context. This is discussed further below in the section on building and industry.

## **Behaviour change**

- What information, tools or forums would encourage you to take greater action on climate change?
- What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?
- Are there other views you wish to share in relation to behaviour change?
- 35. The climate crisis parallels a public health crisis in that the impacts on individuals and communities are wide ranging and require an all-of-government response. As such, Government is well placed to implement a nationwide campaign, similar to many public health campaigns that have been delivered in the past. The campaign must be accompanied by accessible and easy-to read information that helps individuals, communities, and businesses transition to low-emissions living.
- 36. In order to encourage widespread action, opportunities for emissions reduction must be made as simple as possible. Here we must think about busy households and small business owners who acknowledge the importance of this transition, but do not have the time or the energy to develop their own transition plan despite the many resources that are available.

37. Lastly, a common reaction we hear from individuals and small businesses is that they are not convinced their actions will matter. Some feel it is pointless to even try when there are so many other big emitters, nationally and internationally. For this reason, it is important to (i) illustrate why and how transitions for individuals and small businesses matter and (ii) publicise good news stories about transitions that are occurring with big emitters as well.

## Moving Aotearoa to a circular economy

- Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?
- How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?
- What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?
- What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?
- What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?
- The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?
- Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?
- 38. The current waste minimisation reforms that focus on the effective use of resources such as designing out waste in the first instance; designing for effective deconstruction to maximise recovery of materials; using recycled materials from waste that has been generated; or recycling or reprocessing waste back into new products will underpin our movement to a circular economy. It is imperative that the Emissions Reduction Transition Pathway supports those initiatives from the waste minimisation sector.
- 39. It is equally important that all government agencies recognise the role they play in the transition. Not only is it important to provide support and resources to regional and local communities, but Government must also consider its own practices whether it be better construction of buildings, roads or infrastructure, or even waste from government offices, waste minimisation must be incorporated through better procurement to model improved behaviours and drive change.

## Transitioning key sectors

#### Transport

We are proposing four new transport targets in the emissions reduction plan, and are seeking your feedback.

- Do you support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?
- Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?
- Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?
- Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?
- The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?
- Are there any other views you wish to share in relation to transport?
- 40. Because transport is the largest source of the Kāpiti Coast districtwide emissions inventory, Council is particularly interested in emissions reductions from the transport sector.
- 41. As a member of the Wellington Region Transport Committee (RTC), Council supports all aspects of the RTC's submission, and we note that the Regional Land Transport Plan has identified an emissions reduction target for the Wellington Region. In addition, on 11 November 2021, Council passed a motion to support the Free Fares Campaign being coordinated by the Aotearoa Collective for Public Transport Equity. The Free Fares campaign is advocating for free public transport for Community Service Card holders, tertiary students and under-25s.
- 42. Districtwide emissions from transport increased in number, and as a proportion of total gross emissions, from 142,714 tCO<sub>2</sub>e (45% of total gross emissions) to 199,773 tCO<sub>2</sub>e (57% of total gross emissions) between 2001 and 2019. Within the transport sector, the largest increase was for road emissions from petrol and diesel use, which increased by 48% from 2001 to 2019.
- 43. Population growth alone is not sufficient to explain this increase in transport emissions as per capita emissions from transport were 3.3 tCO<sub>2</sub>e in 2001 compared to 3.6 tCO<sub>2</sub>e in 2019.
- 44. This increase in transport emissions was the largest real change in all districtwide emissions, despite Council's efforts to enable mode shift and active transport. In our submission to the Climate Change Commission, Council discussed our many efforts over the years to promote mode shift. This submission has been attached as Appendix 3.
- 45. Several community groups in our District argue that there is a correlation between these rising transport emissions and the new expressways. This is plausible as the new expressways could make driving into Wellington an attractive option, particularly if the public transportation options are limited.

- 46. Our communities, particularly in rural areas, rely heavily on private cars due to poor connectivity, lack of investment in the rail network, poor levels of bus service, and lack of integration within and between modes. Access to key educational and health services located outside the District can also be a significant issue for some of our residents.
- 47. The Kāpiti Coast District Council Sustainable Transport Strategy identifies addressing climate change and improving mode choice as key focus areas. However, encouraging a change in travel behaviour and supporting mode shift to reduce transport-based emissions requires significant infrastructure funding. This needs to be identified and addressed to ensure there is no impact on local government expenditure and rate payers, particularly since many smaller councils with a low rate paying base can find themselves competing against larger cities, Waka Kotahi and regional councils (who are responsible for public transport funding) for limited funding sources.
- 48. For many of our transport projects, 51% of the funding comes from Waka Kotahi but this needs to be co-funded through mechanisms such as the Long-term Plan. Where funding bids to Waka Kotahi are unsuccessful, or funding received is lower than bids made, local councils either need to fund the project or forgo / defer projects. Recently, our Council has had to indefinitely defer a number of projects supporting transport connectivity and active transport due to unsuccessful funding bids.

## **Energy and industry**

- In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?
- What areas require clear signalling to set a pathway for transition?
- What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?
- What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?
- How can work under way to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?
- Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?
- In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold?
- We have identified a proposed threshold of 1 kt CO2e for large stationary energy users including commercial entities. In your view, is this proposed threshold reasonable and aligned with the Government's intention to meet emissions budgets and ensure an equitable transition?
- In your view, what is an appropriate threshold for other large energy users such as transport companies?

- Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and Emissions Reporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed.
- What level of support could or should Government provide for development of low-emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?
- Are there any other views you wish to share in relation to energy?
- 49. As local authorities are responsible for civil defence emergency management in their areas, Council is always looking to identify and manage risks to the District. While Council supports the transition to renewable energy, it is important to ensure energy resilience, particularly in the face of drought or natural disaster.
- 50. In terms of decarbonising the industrial sector, it is also important to consider the strategic interests of the country. Currently, New Zealand is experiencing massive shortages across a range of sectors because of supply chain issues. If New Zealand chose to decarbonize some sectors by moving offshore, for example, this could create new risks that might have long term impacts on New Zealand's economy. Any efforts to decarbonise the industrial sector should include incentives to support local and regional innovation. In addition, there might be a need for Government to support key sectors that have the potential to develop in the longer term (e.g. hydrogen).

## **Building and construction**

- The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?
- What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?
- The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?
- The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?
- Do you believe that the Government's policies and proposed actions to reduce buildingrelated emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

- How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?
- Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?
- Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?
- The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?
- What should the Government take into account in exploring how to encourage low-emissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?
- What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?
- Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?
- Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?
- 51. Council contends there is merit in making it mandatory to improve the energy efficiency of existing commercial and public buildings; however, the intended long-term use of the building and the expected life of the building might need to be considered as well. The mechanism to achieve this could happen in several ways. One option might be to provide incentives such as tax rebates for owners who take steps to improve their building's efficiency. Rates rebates might also be an option, provided that Government developed a system to reimburse territorial authorities. These initiatives will require central Government funding.
- 52. In response to the question about what the Government could do to help the building and construction sector reduce emissions, our Council has recently incorporated regionally-consistent requirements for waste management plans for construction and demolition sites where the build is over a certain value (yet to be determined) into our Solid Waste Management and Minimisation Bylaw 2021. To assist the sector in meeting these requirements, we are working closely with the sector to provide guidance and support. While this example is specific to waste, similar models could be used for other emissions sources (e.g., energy, transport).

- 53. In addition, and as promoted by MBIE, Council is also in the process of developing the resource recovery area at our transfer station, including providing options for separating and consolidating construction and demolition materials. This will help divert construction and demolition waste away from landfills. There is a lack of solutions for timber, however, so incentives and funding to address this significant waste stream are required.
- 54. Another source of emissions in the building and construction sector that appears to be overlooked is the draining of peatlands to make sites suitable for building. This is of particular concern in the Kāpiti Coast due to the District's large areas of peatland. As peatlands have acted as carbon sinks for thousands of years, greenhouse gas emissions are released into the atmosphere when they are drained. Because it is difficult to measure emissions from drained peatlands at the local level, these emissions appear to fall under the radar and are not included in emissions inventories. In addition, there does not appear to be any mechanism to include these emissions as a cost of development.
- 55. While our Solid Waste Management and Minimisation Bylaw 2021 requires waste management plans for construction and demolition sites (as noted in paragraph 52 above), it seems plausible that someday a carbon neutral plan could be required as well. In order to do this, however, tools and resources are required to estimate emissions that would arise from building plans, along with incentives and mechanisms to enforce the requirements.
- 56. As for the reduction of fossil fuel use in buildings, Council is concerned that establishing timeframes forcing people to no longer use fossil fuels could raise equity issues, particularly for residential buildings. As many people currently rely on gas for heating and cooking, moving away from these towards electricity could mean that some people can no longer afford to heat their homes or cook their meals. As these costs could be from transitioning appliances or housing infrastructure to electric or increasing costs of electricity itself, financial support must be made available for those needing help to make this transition.
- 57. It is also important to consider whether such requirements could inadvertently drive perverse outcomes. For example, the increasing cost of housing is resulting in a proliferation of 'tiny homes'. Some of these can be sub-optimal alternatives, skirting around current requirements and resulting in more people living in substandard housing. As such, any new requirements should take into account what this means for the costs of building and how this might impact consumer behaviour.
- 58. Ultimately, a one-size-fits-all approach is unlikely to work. Identifying and understanding each target audience is critical. To reduce costs, there might also be merit in considering whether there are other options that could rely on existing building infrastructure. For example, are there new technologies that the Government could support (e.g., hydrogen) that could, in turn, provide more cost-effective options?
- 59. In regard to improved thermal performance standards for buildings, the building regulations play a key role. With the current regulations, there are instances where a finished building

could be approved without ensuring the bare minimum requirements for delivering a warm, dry home. Regulations must define and promote gold standard energy efficiency, while also defining and promoting resilience, low maintenance, and low whole-of-life costs.

- 60. This can only be delivered with a workforce that is trained to support this transition. For example, how insulation is installed will make a big difference to how the finished building will perform. Upskilling the workforce, alongside better-quality assurance tools, will lead to better standards of work and more efficient buildings.
- 61. It is also equally important that programmes are developed to improve existing housing stock that is poorly designed and/or poorly insulated. In 50 years, it is likely that most of the existing housing in our District will still be in use. Programmes like Warmer Kiwi Homes should be expanded to include energy conservation and transitions to renewable energy sources. Council supports the requirements for landlords to make these changes through the Residential Tenancies Act reforms and would argue that even further requirements could be mandated.
- 62. Through discussions with the development sector in our District, it is clear that innovation in the building and construction sector (for new builds or remodels of existing builds) would benefit from a contestable fund. There is a need for new ideas for low-emissions designs that also allow for climate change adaptation. While there are many examples of innovative designs overseas, it is not always clear how suitable these models are to the New Zealand context. As the majority of the Kāpiti Cost District lies between the coastline and the foothills, innovation for building in areas that are prone to ponding and flooding is essential.

#### Agriculture

- How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?
- How could the Government support the specific needs of Māori-collective land owners?
- What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?
- What research and development on mitigations should Government and the sector be supporting?
- How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?
- How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?
- Are there any other views you wish to share in relation to agriculture?
- 63. Council recognises that agricultural emissions are a significant proportion of New Zealand's greenhouse gas emissions profile.

- 64. In the Kāpiti Coast District, however, agriculture emissions reduced by 41% (more than any other sector) from 2001 to 2019. The reason for this is due to a reduction in the number of livestock animals farmed within the District.
- 65. The Kāpiti Coast District is welcoming more sustainable and plant-based businesses to its region and has started working together with stakeholders to increase sustainable plant food production.

#### Waste

- The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?
- Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?
- What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?
- Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?
- Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?
- Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?
- Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?
- Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?
- Do you think that the proposals outlined in this document should also extend to farm dumps?
- Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?
- What other options could significantly reduce landfill waste emissions across Aotearoa?
- 66. Council supports the submission from the the WasteMINZ TA Forum, specifically in regard to the feedback provided on specific targets.
- 67. Waste emissions for the Kāpiti Coast District reduced by 4% between 2001 and 2019. This decline was driven primarily through improved landfill gas capture where waste is disposed. Council continues to promote behaviour change, particularly through its education programmes funded by the Waste Levy, but more behaviour change is required. Further incentives would help, such as pricing of alternative re-use, recovery and disposal options or rebate schemes for certain recyclables.

- 68. In response to the question about initiatives that can help households, communities and businesses reduce their organic waste (including timber), it is important to note that timber waste comes mainly from the construction sector. This is not necessarily the result of 'wrong' behaviour, but rather a by-product of building norms, regulations, and requirements. As a result, timber waste must be considered in relation to the previous section about the building and construction sector.
- 69. In theory, Council would support a proposal to ban the disposal of food waste, greenwaste, and paper from landfills for all households and businesses by 1 January 2030, but <u>only</u> if viable and operational alternatives were established by 2030. Council would support a more standardised approach to food waste collection systems, but would like to see local or regional options available to process the food waste.
- 70. Council has supported 88 organic waste minimisation projects over the last 10 years and will continue to encourage and support such de-centralised projects using waste minimisation funding. Waste analysis data indicates that even with recycling options in place, a lot of recyclable material is placed in waste bins. Monitoring of household recycling, with education and feedback loops to promote behaviour change, is required and funding support for this would assist. In addition, greater incentives may be required in those instances where waste collection is carried out by private providers rather than councils.
- 71. In terms of landfill gas (LFG) capture systems, Council would support a potential requirement to install these at landfill sites when suitable. In addition, Council also supports the requirement for transfer stations to separate and recycle materials, rather than sending them to landfill.
- 72. Council notes that sewage sludge is only mentioned in a footnote of the consultation document: "Options for pre-treatment is another pathway particularly relevant to wastewater treatment plant sludges and will be a focus area for future emissions reduction plans" (p104).
- 73. Sewage sludge is on ongoing issue that many local authorities struggle to manage because it has a large emissions footprint and increases with population growth. It is very difficult if not impossible to reduce sewage sludge and the processing of sewage sludge impacts other parts of the waste stream. One of the reasons why some landfills in the Wellington Region do not divert more greenwaste to compost is because they require a certain volume of greenwaste (and other general waste) to achieve the required ratios for mixing with sewage sludge.
- 74. While the Ministry for the Environment has drafted standards for the management of sewage sludge in the past, the proposed management methods have not been palatable to local iwi. If sewage sludge is not addressed now as a priority, however, the processing of sewage sludge will continue to prevent the diversion of other organic wastes to compost. Nationally, this is a significant issue.

## F-gases

- Do you think it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable, or not?
- One proposal is to extend the import phase down to finished products containing high-global warming potential HFCs. What impact would this have on you or your business?
- What are your views on restricting the import or sale of finished products that contain highglobal warming potential HFCs, where alternatives are available?
- What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?
- Do you have any thoughts on alternatives to HFC refrigerants Aotearoa should utilise (eg, hydrofluoroolefins or natural refrigerants)?
- Can you suggest ways to reduce refrigerant emissions, in combination with other aspects of heating and cooling design, such as energy efficiency and building design?
- 75. From 2001 to 2019, industry emissions in the Kāpiti Coast District increased by 445%. Most of these emissions are caused by industrial refrigerant use, which increased by 498% in this period. The actual amount of emissions is small, but it does raise concerns.

## Forestry

- Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?
- What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?
- What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?
- What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?
  - Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?
  - What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?
- If we used more wood and wood residues from our forests to replace high emitting products and energy sources, would you support more afforestation? Why or why not?
- What role do you think should be played by:
  - o central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment?
  - o the private sector in influencing the location and scale of afforestation?
- Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?
- From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?
- Are there any other views you wish to share in relation to forestry?

- 76. Forestry must provide a buffer. This is not just in case other sectors of the economy underdeliver reductions or to increase the ambition of our future international commitments, but rather because some sectors are likely to always have some emissions.
- 77. While Council has been successful in lowering its corporate emissions, Council remains a large services provider and, as such, will always emit. In fact, emissions are likely to increase in some areas as the District grows. For this reason, carbon sequestration through forestry is essential for our organisation when pursuing carbon neutrality.
- 78. Due to the role that local government plays in land-use planning, local government should be well placed to influence the location and scale of afforestation, but guidance and support are required. Councils will need support to hold firm on any requirements that are put in place for afforestation on private land; some land-owners will require incentives – often financial – to use their land in this way; and there will need to be a way to ensure that the forests are not removed when the land changes ownership.
- 79. Council would also like to see consideration given to afforestation of surplus Government land. Due to the construction of expressways across the Kāpiti District, Government owns pockets of land along the expressway route that will become surplus once the expressways are completed. Afforestation on this land would enable sequestration, while also providing environmental and biodiversity benefits.
- 80. Council notes that sequestration through wetlands appears to be growing. In September 2020, Greater Wellington Regional Council supported proposals to retire grazing and restore rare wetlands and forest ecosystems in Queen Elizabeth and Kaitoke regional parks. In Queen Elizabeth Park, the intention is to restore 128.5 hectares of peatland and dune forest. Greater Wellington argued, "While restoring the peatland to wetland will not yield tradeable [carbon] units, it will contribute towards real emissions reductions to the atmosphere by converting the land from a carbon source to a carbon sink".
- 81. Undoubtedly, our Council supports the environmental restoration intention but holds concerns about the overall sequestration potential of restored wetlands. Our understanding of the science is that wetlands can sequester carbon dioxide, but some can emit large amounts of methane depending on the composition of the wetland which causes them to emit more CO<sub>2</sub>e than they sequester. This is of concern because, in the short term, methane has considerably more warming power than carbon dioxide. More science that includes considerations of methane emissions is required.
- 82. As wetlands are prevalent throughout the Kāpiti Coast District, our Council is very interested in this science. If wetlands can serve as net greenhouse gas sinks, incentives to restore them (similar to those being developed for forests) would be useful. The added benefits of wetlands for our District, in addition to enhancing biodiversity, is that they can also contribute to stormwater management which is becoming increasingly important for climate change adaptation.

## Appendix 1: Kāpiti Coast District Council's Climate Emergency Action Framework

## 1. Framework Validation

1.1 The Kāpiti Coast District Council Climate Emergency Action Framework was adopted at a meeting of the Kāpiti Coast District Council held on 29 July 2021, after completion of a public consultation process as part of the Long-term Plan 2021–41.

## 2 Vision

2.1 The vision at the heart of the Climate Emergency Action Framework is a thriving, vibrant and strong Kāpiti that has reduced its carbon footprint significantly, transitioned to a low-carbon future, and prepared for challenges and opportunities that come from responding to the climate crisis.

## 3 Objectives

- 3.1 The Framework's primary objective is to establish a common aim and set of principles to embed considerations of climate change mitigation, adaptation, sustainability and resilience across the organisation.
- 3.2 The Framework will guide Council decision-making to ensure consistent practices, embed sustainability across Council, provide a platform to raise awareness about existing workstreams, and provide a platform to agree plans and priorities for future work.
- 3.3 The objectives and principles proposed in the Framework align with the community outcomes of the Long-term Plan 2021–41 and are based on feedback Council has been receiving from the community for the past several years.
- 3.4 Additional information on Council's current and future climate change-related workstreams will follow the development of this Framework.

## 4 Principles

- 4.1 Council demonstrates strong and effective leadership on climate change mitigation and adaptation to support Toitū Kāpiti and give effect to the climate change emergency; this includes a commitment to act in the face of uncertainty using the best scientific information available.
- 4.2 Council honours Te Tiriti o Waitangi and its partnership with mana whenua. Ngāti Raukawa ki te Tonga, Ātiawa ki Whakarongotai, and Ngāti Toa Rangatira will be involved as partners in Council's climate change response and any projects that arise from this Framework to ensure a mana enhancing partnership is nurtured throughout.
- 4.3 Council will meet all of its climate change-related statutory obligations.

- 4.4 Decision making is inclusive, transparent, and based on ongoing collaboration and consultation with the wider community, businesses, social service organisations, and key sectors from industry and science.
- 4.5 Decision making will acknowledge the depth of knowledge that Ngāti Raukawa ki te Tonga, Ātiawa ki Whakarongotai, and Ngāti Toa Rangatira hold in terms of climate change and the value of māramatanga (lessons learned through centuries of kaitiakitanga, manaakitanga, and whanaungatanga). Council will draw on this knowledge during the decision-making process to reflect the value of māramatanga and the expertise that mana whenua have in this area.
- 4.6 Decision making will consider:
  - 4.6.1 Best practice guidance and recommendations
  - 4.6.2 Costs and benefits, including broader co-benefits to the four well-beings
  - 4.6.3 Level of risk, particularly if an action is not taken
  - 4.6.4 Urgency of any issues at hand
  - 4.6.5 How effectively a proposed action will address any issues at hand
  - 4.6.6 Avoiding any actions that might worsen inequity or compromise future generations
  - 4.6.7 Promotion of actions that will allow mana whenua to act as kaitiaki, supporting them to create sustainable practices that they can implement within their rohe
  - 4.6.8 Mana whenua advice, community feedback, and potential alignment with neighbouring councils
  - 4.6.9 Long-term effectiveness of proposed actions, regardless of current or future trends or pressures.
- 4.7 Sustainability, resilience, and climate change-related work is integrated and coordinated across Council.
- 4.8 Council takes opportunities to participate in government reforms of national policy and legislation particularly in relation to climate change mitigation, adaptation and the Resource Management Act (RMA).
- 4.9 Council advocates for policies and programmes that support the Toitū Kāpiti vision, and actively canvasses for funding opportunities.
- 4.10 Council looks for and takes opportunities to lead, facilitate and empower iwi-led and other community-led projects and initiatives that aim to build sustainability, resilience, and green innovation.

## Appendix 2: Emissions reduction at Kāpiti Coast District Council

Kāpiti Coast District Council made a decision in 2011 to focus strongly on reducing its corporate greenhouse gas emissions (GHG) to mitigate its contribution to climate change. To ensure independent validation of its achievements and help embed 'carbon conscious' behaviour into the community and key industries, the Council joined CEMARS<sup>®</sup> (Certified Emissions Measurement and Reporting Scheme) administered at the time by Enviro-Mark Solutions.<sup>\*\*</sup> Being part of this leading emissions measurement scheme put Council in a strong position to promote the importance of measuring, managing and reducing carbon and other greenhouse gas emissions.

For the 2019/20 year, Council's GHG emissions audit verified that the Council had reduced its carbon footprint by 78%, from 12,500 tonnes  $CO_2e$  in 2009/10 (the baseline year) to 2,769.95 tonnes  $CO_2e$  in 2019/20.



A range of actions were taken to lower emissions. <u>Here we outline a few of the major projects</u> <u>undertaken to achieve this result.</u>

## Fuel switching and renewable energy

 <u>Reductions in diesel</u>: Early on it was noted that diesel was a significant source of fuel for many of the Council's activities. To reduce its consumption, the Council looked for alternatives. As part of this effort, the drying of sludge at the Paraparaumu Wastewater Treatment Plant (PWWTP) was converted from diesel to wood chip in September 2010, which significantly reduced greenhouse gas emissions and the operating costs of the plant. The energy savings from this project were estimated at approximately \$300,000 per annum

<sup>\*\*</sup> CEMARS was renamed 'Carbon reduce' certification in late 2019 and Enviro-Mark Solutions was renamed 'Toitū Envirocare' (which is still a wholly owned subsidiary of Manaaki Whenua - Landcare Research).

and it was calculated to have reduced our emissions by about 23% at the time of implementation (a reduction of around 2,880 tonnes  $CO_2e$  by the time the full year effects had worked through in 2011/12).

- Transitioning to solar:
  - In January 2012, a small solar photovoltaic (PV) system was installed at Ōtaki Library as a pilot. As this was deemed successful, in 2014/15, the Paraparaumu Wastewater
     Treatment Plant's power requirements were supplemented with the installation of a 32kW array of solar panels, which saved \$6,000 in electricity costs in its first full year (at prices prevailing at the time).
  - In 2018, Energise Ōtaki (EO) came to Council with a proposal to establish a Solar PV farm on Council land alongside the Ōtaki Wastewater Treatment Plant (WWTP), with a view to selling the electricity generated to the WWTP 'behind the meter'. With grant funding from the Wellington Community Trust, a lease agreement between EO and Council was signed and a 107 kWp solar array was installed in October 2020. Council pays EO for the power and the proceeds are put into the Whakahiko Ōtaki – Energise Ōtaki Fund to support community-initiated energy projects. Council benefits from a modest reduction in its GHG emissions as the renewable electricity is supplied directly to the Ōtaki WWTP and reduces its need for grid supplied electricity. For its part, Energise Ōtaki will gain a source of regular income which it will use to develop other renewable energy and energy efficiency projects in the community. This project was awarded the 'Best Community Energy Project 2021' from the SEANZ Fronius New Zealand Sustainable Energy Industry Awards and was a finalist in the 2021 New Zealand Energy Excellence Awards.

## **Energy efficiency**

- <u>Swimming pools</u>:
  - As swimming pools can be fairly energy intensive to run, they were a natural place to assess for energy efficiency. When the Coastlands Aquatic Centre was designed, sustainable principles were incorporated from the outset. The translucent roof harvests solar energy which meets 12% of the facility's annual heating demand and has reduced the energy required for lighting by 70%.
  - o At the Ōtaki Pool, a new condensing gas boiler was installed in October 2012 as a more energy efficient replacement for the old boiler. In 2014/15, an energy management system was installed at the pool to further improve the energy efficiency of the operation. In late 2019 a feasibility study was commissioned to look at the potential for further energy efficiency gains through installation of an HVAC system and to explore the requirements, costs and carbon savings of a move from the condensing gas boiler to heat pumps for water and space heating. The results of that study found that the cost of the investment would be too great compared to the emissions saved, but other options were identified including installation of heat transfer units and other improvements to reduce heat loss in the building.
- <u>Civic administration building</u>: The Council's upgrade of its Civic Building included an atrium designed to allow natural light to filter into the space which has reduced lighting energy requirements. Shading of north-facing windows, efficient air conditioning and ventilation,

meeting room occupancy sensors and responsive lighting systems have also contributed to significant energy efficiency improvements. Accordingly, the building was awarded a 4.5 (out of 6) star NABERSNZ rating. The Council has since carried out similar refurbishments in other buildings and continues to look for other opportunities in its building stock across the District.

## Installation of water meters

Household and business water meters were installed throughout the District in 2013/14 as part of a move to improve water conservation, identify leaks, and enhance the sustainability of our existing water supply. The resultant reduction in demand for water had the additional benefit of significantly reducing electricity use through our water distribution network. In 2014/15, an estimated \$88,000 of energy costs for water and 159 tonnes of CO<sub>2</sub>e emissions were avoided.

## Disposal of sewage sludge

 Our local landfill at Otaihanga reached the end of its life and was closed to all but cleanfill in late 2015. As a consequence, we were forced to find an alternative disposal site for our dried sewage sludge from the Paraparaumu WWTP. From January 2016 we have transported the dried sludge to Silverstream Landfill in Lower Hutt. Because the Silverstream landfill had a certified Landfill Gas Capture and Destruction rate of 90%, this move contributed to a very significant reduction in our emissions.

## **Electric Vehicles**

- Council purchased a Nissan Leaf battery-electric vehicle for its carpool in 2016. This vehicle has the lowest costs of ownership compared to other vehicles in its class and reduces CO<sub>2</sub>e emissions. Council later purchased a second Nissan Leaf in December 2019 as well as an EV for the Mayor's vehicle. Council has recently agreed to purchase 5 more EVs.
- We are currently in the process of exploring EV charging options at the Civic building with a view to expand EV charging capability by adding 3 new stations as well as future proofing by laying infrastructure for 4 more EV charging stations. This will allow us to easily add charging stations as EVs are added to the Council fleet.

## LED streetlights

- Over 2017/18 to 2018/19, Council converted 4,699 conventional streetlights to LED's out of a total of 5,320 streetlights in the District (noting that a number of streetlights are private).
- Verified audit data for 2018/19 shows that the LED streetlight replacement programme resulted in a reduction of 933,000 kWh in electricity use compared to 2016/17 (prior to the start of the programme) and a reduction of 111 tonnes in CO<sub>2</sub>e emissions.
- The projected annual energy savings are estimated to be around 1.05 -1.2 million kWh from 2019/20 onwards (compared to 2016/17), resulting in a reduction of around 140-150 tonnes CO<sub>2</sub>e per annum compared to 2016/17.
- Council is currently looking for other opportunities to continue with the LED roll out in other areas, such as our parks and parking lots.

## Appendix 3: Kāpiti Coast District Council's Submission to the Climate Change Commission

4 March 2021

Climate Change Commission Attn: Submissions analysis team PO Box 24448 Wellington 6142

#### CLIMATE CHANGE COMMISSION 2021 DRAFT ADVICE FOR CONSULTATION

Kāpiti Coast District Council (Council) appreciates the opportunity to provide feedback on the 2021 Draft Advice for Consultation.

For responses to the specific questions posed in the consultation document, Council supports the submissions made by Greater Wellington Regional Council, Local Government New Zealand (LGNZ), and Taituarā (formerly known as SOLGM).

Overall, Council supports the recommendations from the Commission, but contends that local government must feature more.

The key messages from this submission are:

- Due to its direct relationship with local communities and businesses, local government has a significant role in promoting and enabling climate change mitigation and adaptation;
- The Commission's draft advice does not appear to acknowledge local government's significant role in this space, which also means that the Commission's recommendations have not fully realised the opportunities available through the use of local government as an implementation partner;
- The proposed carbon budgets are very cautious and incremental, and Council believes deeper cuts are possible as demonstrated through our own organisational emissions reduction journey;
- Council asserts that even further emissions reductions would be possible if the Commission's advice included recommendations to further support local government's implementation role through nationwide policy, further guidance, and additional funding; and
- Council has been surprised to see that the focus of land-use planning has been primarily on agriculture and forestry, seemingly without much acknowledgement of the importance of urban design.

To elaborate on these key messages, Council would like to use this submission as an opportunity to tell the Commission about our own emissions reduction journey in the hopes that this will provide a useful example of the opportunities and challenges local authorities encounter when leading, supporting, and promoting emissions reductions – particularly for a council like ours here on the Kāpiti Coast, which is a growing, provincial District on the edge of a large urban centre.

To set the scene, this submission provides some context on the Kāpiti Coast District and then discusses Council's journey towards organisational and districtwide emissions reductions.

#### The Kapiti Coast District

As of June 2020, the estimated resident population of the Kāpiti Coast District was 57,000 people. The District has a large population of older residents, a relatively high number of people who are not in the labour force and/or are on fixed incomes, and several areas of high deprivation.<sup>1</sup>

The District is not homogenous, however, and there are mixed statistics around key social indicators such as housing, with very high home ownership (fifth highest in the country) and very low rental affordability (the fifth lowest in the country). At the same time, the District continues to attract young families due to the beach lifestyle and proximity to the Wellington labour market, with those who commute into Wellington for work earning considerably higher incomes than the District average.

The Kāpiti Coast District continues to grow, primarily from new residents relocating to the District from other parts of the Wellington Region. Between 2013 and 2018, the District's population grew at an annual average of 1.8% compared to the 0.8% forecast for the same period. For 2019 and 2020, this level of growth continued at 1.4% and 1.8% respectively, according to Statistics New Zealand's provisional residential population estimates.

In May 2019, Kāpiti Coast District Council declared a climate emergency and announced an aim to achieve corporate carbon neutrality by 2025, and established a Waste Minimisation Task Force. While these motions were partly in response to local calls for transparency on Council's climate change position, the emergency declaration was also a call to Central Government to provide more support to local authorities for climate change mitigation and adaptation.

The role of the Waste Minimisation Taskforce was to review Council's approach to carrying out its commitments in the Wellington Region Waste Management and Minimisation Plan 2017-2023. While Council has a wide range of waste management and minimisation programmes, it is currently developing a compost programme aimed at reducing biogenic methane emissions from residential food and greenwaste. Additionally, work is in process on the development of an improved resource recovery network.

## Council's organisational emissions reduction journey

Council has had a Carbon and Energy Management Plan since 2012 and, under Toitū Envirocare's Carbon reduce scheme, Council carries out an annual emissions inventory. For the 2018/19 financial year, Council operations emitted gross 2,867 tCO<sub>2</sub>e, down 77% since 2009/10. This compares to its goal of reducing emissions by 80% by 2021/22 (compared to the 2009/10 baseline year).

The Council has received a number of awards over the past 10 years for its emissions reduction focus and achievements, from the Ministry for the Environment, EECA and Toitū Envirocare. The most recent award was the 'Excellence in Climate Action' award received from Toitū Envirocare in late 2019, for Council's achievement in reducing its emissions so substantially over the previous 9 years.

These reductions were achieved through a range of actions, including energy conservation, waste reduction, fuel switching from fossil fuels to wood pellets and electricity, and some direct use of

<sup>&</sup>lt;sup>1</sup> According to the 2018 Census, the median age in the Kāpiti Coast District is 47.9 which is 2% higher than it was in 2013; 40% of residents are not in the labour force compared to 31% nationally; estimates suggest close to 40% receive income from New Zealand superannuation or Work and Income, compared to approximately 25% in the wider Wellington Region; and the median income is the 2nd lowest in the Wellington region (\$29,700 compared to \$36,100 for the entire region).

renewable energy. Council is proud of this achievement, which shows that solid commitment can lead to substantial emissions reductions in a relatively short period of time.

Because our Council has been so successful in the reduction of its corporate emissions, Council contends that it is possible to meet the national targets even faster than the Commission has proposed.

#### The District's emissions reduction journey

While Council's Carbon and Energy Management Plan focuses primarily on organisational emissions, districtwide emissions are monitored as well. Greenhouse gas inventory reports tell us that 57% of emissions in our District are from transportation, with the majority of this being from light vehicles (Figure 1, Table 1). From 2001 to 2019, districtwide transport emissions increased by 40%, and according to the 2018 Census, 67.6% of employed residents travel to work by car, truck or van.<sup>2</sup>



| Sector sub-category | tCO <sub>2</sub> e | % Gross | % Sector |
|---------------------|--------------------|---------|----------|
| Petrol              | 90,302             | 25.7%   | 45.2%    |
| Diesel              | 57,638             | 16.4%   | 28.9%    |
| Rail Emissions      | 233                | 0.1%    | 0.1%     |
| Bus (Electric)      | 11                 | 0.0%    | 0.0%     |
| Jet Kerosene        | 31,019             | 8.8%    | 15.5%    |
| Av Gas              | 59                 | 0.0%    | 0.0%     |
| Marine Diesel       | 16,708             | 4.8%    | 8.4%     |
| Light Fuel Oil      | 3,529              | 1.0%    | 1.8%     |
| LPG                 | 275                | 0.1%    | 0.1%     |
| Total:              | 199,773            | 56.9%   | 100.0%   |

Source: AECOM. 15 May 2020. Kapiti Coast District Greenhouse Gas Inventory.

<sup>&</sup>lt;sup>2</sup> Source: 2018 Census. Main means of travel to work by age group and sex, for the employed census usually resident population count aged 15 years and over. The results for private vehicle, company vehicle, and passenger have been combined

This data tells us that a mode shift away from fossil fuel vehicles is the most important thing needed to reduce emissions across the Kāpiti Coast District.

Council has a wide range of projects that seek to encourage this shift towards greener transport. For example, some of the initiatives Council has undertaken, and will continue to undertake, include:

- The development of an extensive network of shared cycleways and walkways through the Stride 'n' Ride Kāpiti Coast programme,
- The placement of EV charging stations at strategic locations across the District,
- Increased numbers of EV vehicles in the Council fleet,
- Physical works across the roading network to improve bike and pedestrian safety,
- A recent review of our Speed Limit Bylaw,
- A suite of educational programmes through schools, libraries, and community centres to support bike and pedestrian safety, and
- Participation in regional working groups resulting in outcomes like the Regional Mode Shift Plan for Wellington, which was adopted in August 2020.

Another key aspect of a green transport network is an efficient and effective public transportation system, but Council has very limited influence in this area because the public transport network is managed by Greater Wellington Regional Council (GWRC).

In order to improve our public transport system, Council actively advocates to GWRC, Waka Kotahi NZ Transport Agency, and the Ministry of Transport. During the past three years, Council has made no less than 10 submissions advocating for better public transportation in the District. Specifically, Council made submissions on:

- NZTA's draft Long Term Strategic View;
- GWRC's Fare Review;
- GWRC's Regional Land Transport Plan Mid-term Review;
- GWRC's draft Long Term Plan 2018–2028;
- Ministry of Transport Government Policy Statement (GPS) on Land Transport 2018;
- GWRC's draft Annual Plan 2019/20;
- Ministry of Transport's Road to Zero: Draft Road Safety Strategy 2020–2030
- Ministry of Transport's Government Policy Statement on Land Transport 2021;
- Ministry of Transport's New Zealand Draft Rail Plan; and
- NZTA Accessible Streets.<sup>3</sup>

## Support required

While Council acknowledges that the delivery of public transportation in a large, metropolitan region is challenging, Council's efforts at advocacy and relationship-building with the key public transportation providers has been slow to deliver results. Meanwhile, Council continues to hear from our community that they would like us to do more.<sup>4</sup>

<sup>&</sup>lt;sup>3</sup> At the time of writing this submission, Council is currently preparing three more submissions on Waka Kotahi's National Parking Management Guidance, the draft Wellington Regional Land Transport Plan 2021, and the draft Wellington Regional Public Transport Plan 2021. Council will also be reviewing the Traffic Bylaw this year.

<sup>&</sup>lt;sup>4</sup> See, for example, this recent opinion piece by Kāpiti resident, Dr Paul Callister. 18 February 2021. Newsroom. *Flawed transport strategy a tick-box exercise*. <u>Flawed Transport Strategy a Tick-box Exercise</u> | <u>Newsroom</u>

While these public transport providers are aware of the issues in our District, the problem continues to be that the Kāpiti Coast District is a small district on the edge of a large urban centre. Most resources are directed towards the centre, which is struggling with its own transport issues. While there has recently been a review of the Let's Get Wellington Moving programme, the focus on the urban centres is unlikely to address the issues that many New Zealanders are facing in the provinces.

Specific examples of the District's issues with the public transport system and examples of the types of remedies that could be considered are outlined in Table 2 and Table 3.

#### Table 2: Issues and Potential Remedies for <u>Train</u> Services in the Kāpiti Coast

#### General Issues

- There are no regular commuter train services north of Waikanae, despite the fact that the northern boundary of the Kāpiti Coast District, which is part of the Greater Wellington Region, extends beyond Waikanae all the way north of Ōtaki.<sup>A</sup>
- The lack of trains north of Waikanae means that residents drive south to access these services, thereby putting pressure on the Waikanae Park & Ride facilities.
- The Kapiti Line is not electrified north of Waikanae. Current proposals to improve rail services north of Waikanae are considering the use of diesel-powered trains.

#### Specific Concerns

- Council would like to see a greater shift from cars to trains, but this is dependent on the availability of an efficient network that makes trains available in the right place at the right time to meet commuter needs.
- As a general principle, any regional rail system should provide equal service across the entire region. Another objective should be to provide regular services between urban centres (e.g. Wellington and Palmerston North).
- To meet New Zealand's emissions targets, the rail network must shift away from the usage of fossil fuels.
- Population forecasts (and the Wellington Regional Growth Plan) project ongoing growth north of Waikanae, which will exacerbate these issues. Moreover, accelerating construction costs mean projects will become more expensive over time.

#### Potential Remedies

To develop an energy efficient rail network to move people and freight within regions and between urban centres:

- greater investment in the rail network is required;
- new technologies must be explored to determine if there are newer, more cost effective ways to deliver a greener rail network; and
- urban development and land-use planning must consider the placement of residential and business areas in relation to transport hubs.

<sup>A</sup> At the moment the only commuter train is the Capital Connection, which travels one-way from Palmerston North to Wellington in the morning and then back again in the evening.

#### Table 3: Issues and Potential Remedies for <u>Bus</u> Services in the Kāpiti Coast

#### General Issues

- Bus services north of Waikanae struggle to meet the demands of both commuters and day-time users.<sup>A</sup>
- There are no buses from Ōtaki going north towards Levin for residents that must go north to access essential services.<sup>B</sup>
- Most of the buses in the Kāpiti Coast District are large diesel buses that often appear to have relatively low passenger occupancy rates.
- More bus shelters are required across the District.
- While bespoke, dial-a-ride services are available in some areas, it is not clear that users are aware of these services or know how to use them.

#### Specific Concerns

- Council would like to see a greater shift from cars to buses, but this is dependent on an
  efficient network that makes buses available in the right place at the right time to meet
  commuter needs.
- As a general principle, any regional bus system should provide equal service across the entire region.
- Another objective should be to provide regular services in both directions to nearby urban areas, even if they cross regional lines (e.g. Ōtaki to Levin).
- To meet New Zealand's emissions targets, the entire bus network must shift away from the usage of fossil fuels.
- Council does recognise that many bus runs have relatively low passenger occupancy rates, which can make it difficult to argue for more frequent services. At the same time, without more frequent services, it will be difficult to increase usage of the public transport network.

#### Potential Remedies

To develop an energy efficient bus network that will be reliable and heavily used:

- urban development and land-use planning must consider the placement of residential and business areas in relation to transport hubs. This should also consider the location of essential services (e.g. health and other social services, Courts, Police, etc). Because Government service boundaries are not always aligned, it is possible to have residents of one region traveling to another region (which offers a separate bus service) for services. This is the case in Ōtaki where residents fall within the Greater Wellington transport system, but travel into the Horizons region for services. This situation would require (i) interconnected public transport across regions OR (ii) improved alignment with residents' transportation and service providers;
- greater investment in public bus services is required; and
Potential Remedies (continued)

 new technologies and service models must be explored to determine if there are newer, more cost effective ways to deliver a greener bus network, particularly in provincial centres in New Zealand. As an example, Timaru is using smaller mini-buses with the addition of an on-demand capability. This 'MyWay' trial has added a number of 'informal' bus stops to the standard routes which can be requested using the on-demand capability (bookable via smartphone app and landline). This reduces walking distances for passengers; provides improved convenience, particularly for older or access-impaired residents; will produce lower emissions per passenger kilometre; and will hopefully increase patronage.

Note: Council contends that the MyWay trial could be a viable model, despite recent news articles suggesting otherwise. The concerns that are currently being raised about MyWay relate to costs per ratepayer. This does not mean that the service is not working, but rather that the funding model for the service is not working. An effective public transport system that encourages users to switch from private cars to public transport will require more central government funding. The Automobile Association's findings in its 2008 report entitled *A Comparative Assessment of Five national Transport Strategies/Plans* found that all of the nations assessed in comparison 'had higher levels of public transport investment in their cities than New Zealand'. While New Zealand has increased its transport investment since that time, the basic premise still holds true – an effective public transport system requires considerable central government investment. A funding model based on user pays and rates will never allow for the transport systems we need in New Zealand, particularly to meet our emissions reductions goals.

<sup>B</sup> At the moment there is a trial bus that travels Levin-to-Paraparaumu in the morning and then Paraparaumu-to-Levin in the afternoon. While this assists some travellers, it does not assist those that wish to travel north in the morning and return south in the afternoon or evening.

Local government has an important role in helping Aotearoa meet its targets but, as the Kāpiti Coast District emissions reduction journey demonstrates, further work is required to enhance local government's ability to promote and enable climate change mitigation. Council would like to see the Commission give further consideration to recommendations that will ensure local government is well positioned as an implementation partner.

Thank you once again for the opportunity to submit on the 2021 Draft Advice for Consultation. We would be pleased to speak to our submission if there is an opportunity to do so.

Yours sincerely K. Gurunathan JP, MA MAYOR, KĀPITI COAST DISTRICT

<sup>&</sup>lt;sup>A</sup> In response to requests for more buses at peak hours, buses were redirected from midday runs (which are important for older residents and school students) which has meant that no additional services were provided and some residents were then disadvantaged by the reduction in midday runs.

Facing up to climate change in NZ: cut emissions and don't use offsets

Kevin E Trenberth Distinguished Scholar National Center for Atmospheric Research http://www.cgd.ucar.edu/staff/trenbert/



A version of this has been published in the Newsroom, Nov 18, 2021. <u>https://www.newsroom.co.nz/kevin-trenberth-cut-emissions-dont-buy-overseas-offsets?utm\_source=Friends+of+the+Newsroom&utm\_campaign=c4942431c1-Daily+Briefing+18.11.2021&utm\_medium=email&utm\_term=0\_71de5c4b35-c4942431c1-97981709</u>

Dr Kevin E Trenberth is an internationally recognized expert on climate change and honorary academic at the Faculty of Science, University of Auckland

Climate change is happening, mostly due to human activities resulting in changed atmospheric composition that interferes with the natural flow of energy through the climate system. Two greenhouse gases contribute most to this problem, carbon dioxide and methane; emissions of both could be reduced significantly.

Carbon dioxide has increased by 48 percent since the 1800s. As a result, there is global heating: rising temperatures, increased drying, more atmospheric moisture, heavier rains, stronger storms, and more intense droughts, heatwaves, and wildfires. A price on carbon that most companies do not currently pay, created through a tax or carbon market system, would capture the cost of harms caused by greenhouse gas emissions. Indeed, New Zealand has an Emissions Trading Scheme although it does not include agriculture. Prospects for such a price are particularly critical for power production and energy-intensive industries.

A few days before COP26, James Shaw, Minister of Climate Change and Associate Minister for the Environment (Biodiversity) announced New Zealand had raised the pledge to cut greenhouse gas emissions to 50 percent of 2005 levels by 2030. But only about a third of the pledged cuts will come from within the country. The rest would be purchased as carbon credits from offshore mitigation, which could cost billions of dollars. What's more, there is no system for doing this, or for <u>ensuring</u>

<u>cuts are genuine</u>. Further, forests that take up carbon <u>do not last forever</u>, and a forest fire can wipe out all offsets!

Although many companies recognize change is under way and are making plans to adapt, the timeline is much too long and there are no prospects for containing the global mean surface temperature rise since pre-industrial levels to 1.5°C, as suggested in the Paris Agreement of 2015.

The Climate Change Response (Zero Carbon) Amendment Act 2019 requires greenhouse gas emissions (other than biogenic methane) to reach net zero by 2050. The act also established the <u>Climate Change Commission</u> and an emissions reduction plan for 2022-2025. Recommendations centered around rapid adoption of electric vehicles but without plans for where the extra electricity would come from; and plans for phase-out of coal-fired power and energy for drying milk (Fonterra) are much too slow to meet goals of the Paris Agreement. Other key issues include transmission of power from where it is generated to where it is needed, and how to store energy cheaply.

The answer to the source of power must be solar and wind, although bio (wood) waste can also contribute, but neither the Climate Commission nor the Government's Emissions Reduction Plan (ERP) address these issues. This is not commercial solar and wind farms so much as rooftop solar, and even wind. In <u>Germany</u>, with much less <u>sunshine</u> than <u>New Zealand</u>, 1.3 million homes (3 percent) have solar power, generating 4,900 MW of power (8.2 percent of their total). Here, there is an estimated 68 MW from some 19,500 homes (1 percent), and all solar (not just rooftop) provides just 0.5 percent of New Zealand's power. A major reason for the very low uptake of solar is the absence of incentives; instead there are penalties, detailed below.

In many countries "net metering" is in place. That is, extra power not used from rooftop solar at the site is sent to the power company and then recovered later when needed, at no cost. Instead, in New Zealand, the cost of buying the power back is a lot higher; typically, power is purchased from the homeowner at \$0.08 per KWh and sold back at about \$0.28 per KWh. Moreover, the companies discourage use of solar power. These are major disincentives to install solar. The government should immediately stop this practice.

Both solar power and wind power are intermittent. The sun does not shine at night! The problem for the power company is there will be times when it has too much power compared to demand, and managing this intermittency is an unwanted challenge. This problem is exacerbated by a plethora of small electric companies but would be greatly reduced if they were all to share in some way. The best way

to deal with this issue is to couple wind and solar power to hydro power, and simply save the water from flowing over the dam and driving turbines. The bigger the system, the more likely there is to be compensation available. The challenge then is how to best integrate these sources of power into a national system.

Because sunshine is most abundant when wind is less and rain for hydro is also less, there is a natural compensation. Wind is somewhat capricious and may be blowing hard at one spot, but not much nearby. It is well established that assembling a large array of wind generators reduces the intermittency factor. But what happens when there is excess power? How can it be used profitably? One way is to charge a battery, and increasingly large batteries are becoming available. Another is to generate hydrogen to perhaps use later in a fuel cell. But by far the most efficient "battery" is "pumped hydro" storage. This is where water is pumped up hill to a lake, and then when the power is needed, it flows back downhill and drives a turbine. These devices are about 80 percent efficient and are by far the most efficient form of power storage. Of course, construction involves capital costs up front, but their lifetime is typically 75 years or more. In addition, a source of water (lake) and a hill nearby with room for another lake on top are needed; see Figure.



Most of all, this example requires an integrated, New Zealand-wide system of electricity management, either through government or a consortium of power companies, that does not exist!

These aspects have not been addressed by the ERP. Pumped hydro is mentioned in the context of the battery project involving <u>Lake Onslow</u> only as a buffer for the <u>"dry year" problem</u>, but not in the context of intermittency of power. However, pumped hydro has been used extensively in <u>many parts of the world</u>. Switzerland has 6.4 GW of pumped hydro power, 33 percent of that country's total.

An excellent new example is being built at Kidston, Queensland, by the <u>GENEX</u> power company which has cut costs by utilizing and repurposing an old gold mine. Pumped hydro is planned for 250 MW and the height differential between the lower and upper lakes is only 230m. The company is also deploying a 150 MW wind farm at Kidston and battery storage using a Tesla Megapack 50 MW battery with a 20year warranty. All are in progress and will come online in 2024 or 2025. This complex will save over 395,000 tonnes of CO<sub>2</sub> emissions. A number of sites are being contemplated in Tasmania for pumped hydro. Where are the suitable sites in New Zealand?

So, there are many outstanding issues. New Zealand needs to cut emissions in real terms by decarbonizing the energy system and accelerating use of electric vehicles while penalizing internal combustion engine vehicles. Foremost is the need for an integrated national energy system that enables solar and wind power to be integrated with hydro power. It is also essential to appropriately reward rooftop investment by implementing net metering. To cheaply store energy, the most efficient option seems to be pumped hydro, and a prompt search should occur for appropriate sites, especially in the North Island. Using offsets should be avoided.

The suggestions here would not only set New Zealand on the right path with regard to emissions and the Paris Agreement, but they would also improve sustainability and competitiveness internationally, and set an example for the future of society.

END



# Knauf Insulation – Submission on the "Transitioning to a low-emissions and climate-resilient future"



Environment <u>New Zealand</u> Government

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Knauf Insulation welcomes the opportunity to provide feedback on the Emissions Reduction Plan consultation document. We support the goals behind the document and call on the Government to be more ambitious in its emission reduction goals, utilising the ability to achieve negative lifetime cost energy efficiency savings from buildings as part of achieving this.

We encourage the Government to use the suite of policies it has implemented or announced to scale up insulation over time. This is uses existing technology to achieve negative lifetime cost emission reductions, while it also frees up electricity for other sectors, reduces heating costs for households and businesses, and improves health. It is a win for Aotearoa in so many respects, additional to the emissions reductions, that it should be a first priority for government climate investment and policy work.

### About us

Knauf Insulation (KI) is part of the Knauf Group of Companies, a global leader in the manufacture of building products with annual sales in excess of NZD\$20 billion.

KI operates large scale insulation factories in Europe, North America and Asia Pacific for the production of glasswool and rockwool insulation products, primarily for use in new and existing buildings.

In New Zealand, KI has been supplying glasswool and foam insulation boards since 2010 (branded Earthwool glasswool, ecoinsulation glasswool and Climafoam) through a network of merchants, distributors and specialist installers.

KI has a successful track record in the creation of research and development programs that have significantly increased production efficiencies and sustainability in the global insulation industry. For example, KI's large scale factories utilise a range of proprietary technologies including ECOSE<sup>®</sup> Technology (to remove oil based binders used in traditional glasswool), compression technology (to reduce transport emissions) and KING melter technology to use recycled glass bottles as a raw material.

KI is also active in the development of products and systems for buildings that are customised for regulations in each country, including the support of energy efficiency and sustainability enhancements in homes, non-residential buildings and industrial applications.

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# **KNAUFINSULATION**

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### Summary of our submission

More energy efficient housing – through higher insulation standards for new builds and 'deep' retrofit insulation of existing homes – directly reduces emissions with negative lifetime costs, as well as freeing up energy to enable the electrification of other sectors, and improving the health and financial wellbeing of families.

In our view there is not enough emphasis on the impact of the building sector, and in particular the energy consumption of existing residential buildings on Climate Change.

Our submission calls on the Government to recognise the larger opportunity for reducing residential building energy waste to reduce emissions directly, and to free up renewable electricity supply for the electrification of industrial heat and transport.

To that end, we advise the Government to adopt a more ambitious path for buildings' energy efficiency. We would like to see the Government:

- Set zero energy standards for new buildings as soon as possible and, eventually, existing buildings as well
- Investment in a bold insulation/renovation programme to get existing buildings across all tenures to the Building for Climate Change zero energy standard
- Act as a market leader both as a consumer of commercial buildings and a supplier of housing
- Use Energy Performance Certificates and certification to drive consumer (purchaser/lease) demand for more energy efficient buildings

### Emissions from residential buildings

The residential sector consumes 65 petajoules of energy a year, of which 11 comes directly from fossil fuels and 45 comes from electricity, the marginal unit of which is usually from a fossil fuel plant.

Recently research by Professor Sarah McLaren, Chair of the New Zealand Life Cycle Management Centre, shows that dwellings (including new construction) will emit 170Mt by 2050. The research demonstrates residential sector climate impact will exceed the allocated target budget by a factor of 3.6, concluding: "In other words, New Zealand's residential building stock needs to reduce its carbon footprint by 72% to perform within the 1.5°C global climate target."

Professor McLaren's research calculations cover period from 2018 to 2050 and assess the results in relation to carbon budget for residential sector for the same period. Existing residential buildings contribute 63% of the total residential buildings carbon footprint, while new-build buildings contribute 37% of the impact, as demonstrated in the Figure 1. It is important to note that the largest contributor of the total impact are detached houses (77%).



Professor McLaren says "Research shows New Zealand needs to massively reduce the carbon footprint of our residential housing stock to stay within the international climate target of 1.5°C warming by 2050."



Figure 1: Carbon footprint of all New Zealand residential buildings up to the year 2050 – source Build Magazine, Issue 182

### Targeting energy efficiency first reduces emissions and will enable clean electrification of other sectors

The Commission's emissions reduction path requires a conversion to 100% renewable electricity, at the same time as increasing electricity demand by using it to replace fossil fuels in heavy industry, transport, and buildings. The most cost-efficient way to free up this electricity supply is by wasting less.

Insulating existing buildings provides a significant opportunity to permanently reduce energy waste, due to insulation being a fit-and-forget solution that doesn't require maintenance. Subsidising wide reaching retrofitting insulation programmes is more economically viable than building new power generation plants, and transmission capacity.

There are approximately 1.6 million existing homes in New Zealand, of which 830,000 are either uninsulated or under insulated, and very few reach the 'zero energy' and 'near zero

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energy' standards being adopted in other developed countries. Given this, existing buildings represent the greatest opportunity for energy efficiencies and carbon reduction.

The *Energy Efficiency First* EECA report published in July 2019 states that "An optimal pathway to decarbonising New Zealand's electricity system must include investment in the energy efficiency of existing electrical demands." It also highlights that "electricity efficiency measures can be deployed at a lower equivalent cost than new renewable generation, and that implementing these measures would make it easier to meet new demand arising from electrification."

The paper finds increased and accelerated uptake of electricity efficiency measures would reduce emissions from electricity.

An average house uses 7,000 kWh of power p/a and over 60% of residential energy use can be mitigated by Energy Efficiency initiatives. Therefore, saved energy reduces the burden on the grid and the need for the continual growth of renewable energy supply.

Additionally, 7% of all electricity production is lost in transmission, so saved energy has a direct impact on the cost of transmission.

Deep and high-quality renovation makes it possible to reduce energy consumption in our buildings by up to 80%. European studies show that proper insulation alone can save up to 70% of household power usage Increasing the thermal insulation of walls and roofs considerably lengthens the time interval when the temperature inside a building remains comfortable after the heating has been switched off.

A study conducted by the end-use Efficiency Research Group (eERG) of the Politecnico de Milano shows that well insulated buildings offer the necessary flexibility to receive energy when it is available, attenuating the peaks in power demand on the electricity grid (when all inefficient buildings demand power) and properly exploiting moments of overabundance and scarcity of the supply of energy from renewable sources.

The work by Politecnico di Milano highlights the principle of energy efficiency first. It justifies rational strategies in which the reduction of the energy needs for heating from buildings is an indispensable prerequisite for a rapid transition to sources of renewable energy and the urgent decarbonisation of urban energy infrastructures.

### Peak demand reduction

If New Zealand can manage the peak loads effectively, we can reduce the need for fossil fuel generation and assist with the renewable energy targets.

Residential buildings represent 80% of the peak demand loading on electrical energy demand. Energy efficiency initiatives can affect over 60% of the residential demand with insulation having a significant impact on space heating, the single largest contributor to household energy use.

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A Concept Consulting report finds that a 30% reduction can be easily achieved. A 30% (1200 MW) reduction in the peak load could remove fossil fuel production without the need for new electricity generation, as illustrated in the graphics below:





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Figure 2. Peak load demand. Courtesy of Dr. Michael Jack, Associate Professor, Otago University

<u>New research by Professor Michael Jack et al</u> has found that "rapid uptake of currently achievable best-practice standards could reduce the winter electricity peak by 75 per cent from business as usual by 2050." As these demand peaks are the drivers of fossil fuel use in the electricity system, reducing them would enable the transition to 100% renewable generation. Energy demand reductions from buildings would also free up electricity supply to meet the increased electricity demand from transport and industrial process heat. We should think of building energy efficiency more broadly - as a key to enabling the decarbonisation of electricity generation, transport, and industrial processes.

### The sector has capacity to accelerate insulation/deep renovation dramatically

The technologies and practices to reduce emissions from buildings are well-developed and in good supply, unlike some other emission sources (eg. high-temperature process heat, production of products like aluminum). We do not have to wait for technology, we just need to make the investment.

Expanding the insulation labourforce can be done relatively quickly and easily through established training programmes.

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Nor is supply an issue. For example, earlier this month Knauf Insulation commissioned the newest and most technologically advanced glasswool factory in Malaysia. This factory will service APAC region. The plant has a capacity of manufacturing 75,000 tonnes of insulation per year which is about 3 times Aotearoa's current insulation requirements.

The factory features state-of-the-art technology and control equipment making it one of the most efficient and sustainable insulation plants in the Asia Pacific region. The plant uses up to 80% post-consumer recycled glass in the manufacturing process and feature Knauf patented high compression packaging. All products are made using Knauf Insulation's revolutionary bio-based binder, ECOSE Technology.

The new factory is based in Johor Bahru with an easy access to 4 shipping ports. Highly efficient shipping logistics from Malaysia will also enable Knauf Insulation to minimize shipping emissions even further.

Knauf Insulation supports Commission's suggestion to look at other options e.g. import products from low emissions manufacturing plants overseas instead of investing significant capital in transformation of old and inefficient factories in Aotearoa. This capital would be more beneficial for the country if invested e.g. in improvement of exiting residential buildings. Such approach would reduce the amount of energy used, minimize environmental footprint and also improve health outcomes and address fuel poverty among other benefits.

As a global leader in insulation manufacturing, Knauf Insulation already has a sustainability pathway to achieve Carbon Zero products and reduce the environmental footprint of the entire organisation beyond embodied carbon.



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Knauf Insulation supports the CCC's recommendation to improve energy efficiency standards for all buildings, new and existing stock, through measures like improving insulation requirements. However this needs to happen at much faster pace and scale than ever before.

Knauf Insulation agrees with the CCC's recommendation to expand assistance but not only for low-income households. To meet Aotearoa's international commitments a big uptake in substantial renovations is required of all housing stock. General income households will be the one consuming the most energy and, therefore, it is crucial to improve energy efficiency of owner-occupier homes.

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Aotearoa cannot achieve its commitment of net zero carbon emissions by 2050 without significant energy efficiency improvements to existing buildings and setting new ambitious standards for new buildings.

The greatest opportunity to effect emission reduction is through existing buildings through the integration of energy efficiency into policy. "There are significant opportunities to reduce our emissions by building better buildings and improving the energy use and efficiency of existing buildings. Buildings account for 20% of New Zealand's emissions, which are often locked in for decades by poor design and building practices." This sentiment has been validated by the thinkstep report on Aotearoa's carbon foot print that puts buildings at approximately 20% of the country's total Carbon emissions.



Transport 44%

13 t CO.e

60,000 kt COe

NZ's total footprint per person

### Bringing together policies to achieve energy efficient, low

### emissions buildings

We recommend acting on the following key drivers of improving building energy efficiency:

#### Regulations should target zero energy housing

The Government adopt a zero energy/near zero energy standard, as soon as possible for new builds and, over time, for existing buildings as well.

These changes would need to be implemented through the Building Code, Building Act, and the Healthy Homes Standards. This would mimic the actions that have already taken place in the EU and other developed countries.

The Government's Building for Climate Change programme is working on these issues but it intends to set what is equivalent to a near zero energy standard only in 2035 and has not begun work on existing buildings, the largest source of operational emissions. Consumer expectations and technology advances will mean that the 2035 specifications in the Building for Climate Change programme should be achievable much earlier than is currently proposed. Passive / high performance building design in combination with e.g. NZGBC Homestar scheme are already well understood and are already available for companies to produce product with low to zero carbon emissions.

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### The Government should invest more in energy efficiency

The Government should set a target for residential renovations/upgrades to a zero energy or near zero energy standard, and support this goal with subsidies.

The Government currently has limited and highly targeted programmes to improve building energy efficiency – the Warmer Kiwi Homes programme, which will run out of funding next financial year, and the state house retrofit programme.

A much more ambitious programme, open to a broader range of households and a broader set of upgrades, would see the benefits of reduced emissions and the other co-benefits of insulation realised earlier for New Zealand households.

The International Energy Agency (IEA) has called for a world-wide energy efficient renovation of buildings as part of a US\$3 trillion recovery plan to rebuild the global economy.

The three-year investment is the foundation of the IEA's newly launched Sustainable Recovery Plan which also calls for the increased deployment of low-carbon energy sources, widespread clean transport such as electric cars, more energy efficient industries and investment in technological innovation.

The IEA says the plan would save 4.5 billion tonnes of greenhouse gases annually.

Many European countries are implementing new and generous programmes to encourage building upgrades including, Italy's super Eco bonus, the French national recovery plan and the UK green home grants (illustrated below).

### Example of Recovery Programme England (Green Home Grants)



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£2bn Vouchers for home renovation between Sept. 2020 and 31 March 2021. Government aims to create over 100,000 jobs through scheme.

New Green Homes Grant will give over 600,000 homeowners in England up to £10,000 to install insulation, heat pumps, draft proofing and more to help households cut energy bills. Coverage of twothirds of the cost of qualifying energy efficiency or low carbon heating improvements. The max. value of the voucher is £5,000; max. £10,000 for lowincome. Accreditation rules for tradespeople involved in the scheme, aimed at giving households confidence that improvements to their homes will high quality – although no 'real performance' requirements (which we believe is a necessary next step)

The installer will request and receive payment from the government for the costs covered by the voucher.

The RAP (2020) report also concludes that to achieve net zero emission targets, the rate of renovations on existing buildings must be tripled from 1% to 3% and the depth of renovations must be increased (demonstrated in the below RAP illustration).

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#### Government should act as a market leader

The Government should adopt market leading standards of energy efficiency for the housing it provides and the commercial buildings it uses

The Government is New Zealand's largest consumer of commercial building space and the country's largest provider of housing. In both these roles, it should be market leading and aiming for a zero energy standard. It can use tools like NABERNZ, carboNZero Building Operations and GreenStar to ensure its commercial buildings meet these goals and aim for high Home Star ratings for its state houses. The use of Home Star by Kāinga Ora and the new announcement that new Government buildings will need to have a GreenStar rating over 5 are both welcome steps.

As recommended by the Building for Climate Change programme, the Government should move ahead of regulation, providing experience for the sector in working with these higher standards and acting as a role-model for others.

### **Energy Performance Certificates and Certification**

The Government should introduce mandatory energy performance certificates for houses and commercial buildings

Improving consumer knowledge is a powerful tool to drive energy efficiency. Many other countries have mandatory energy performance certification, including ECPs for houses when they are sold of tenanted in the UK and NABERS for commercial buildings in Australia.

Minimum ratings can be ratcheted up over time in line with the Healthy Homes Standards to push existing buildings towards a zero-energy standard.

In the UK, for example, dwellings below E-grade on an A to G scale can no longer be rented out. In the Netherlands, from 2023, any office that has an energy performance certificate lower than class C will not be considered fit for purpose and cannot be used as an office until it is renovated. The plan is to strengthen this requirement by mandating an energy label A for all offices by 2030.

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These standards also become the basis of private decision-making. Private Banks in the Netherlands promote this requirement among their clients and urge them to renovate up to energy label A, to avoid having to go through two investment cycles. This has resulted in a very large growth of office buildings with an energy label A since 2012. This experience demonstrates how transparency on policy milestones can help market actors activate positive market dynamics that support achievement of regulatory objectives

A robust method of demonstrating compliance with requirements would also help support organisations that have invested in the technology and product performance declaration to meet the objectives of the program, independent certification would strengthen compliance pathways.

A standardised method of product evaluation for embodied carbon is required to demonstrate compliance such as ISO 14025 and EN 15804:2012+A1:2013

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### Other benefits of improving energy efficiency of residential buildings

### **Economic Benefits**

The NZGBC has estimated net benefits of \$1.5 - \$3.1 billion in economic stimulus by simply bringing 120,000 homes up to healthy standards, so these estimated benefits could be up to 7 times that figure if all 830,000 under insulated homes are addressed.

The economic benefits are broad and cover health, job creation, economic stimulus decarbonisation and social benefits.

The benefits in relation to the operating efficiencies of buildings can be directly measured and it is not unrealistic to expect energy savings in excess of 30%.

The Concept report also highlights significant economic returns, highlighting savings of \$500 million p/a from residential properties alone. This report is only looking at low level energy efficiency measures, so there is potential to significantly improve these returns from deeper renovation.

An assessment of Warmer Kiwi Homes by non-for-profit research institute Motu Economics looking the first 45,000 homes retrofitted with insulation under the programme found the scheme had a 6:1 benefit-to-cost ratio.

#### **Health Benefits**

The health benefits as a result of insulation and energy efficiency measure are well documented. The MOTU report in to the EECA insulation programs highlighting significant and prolonged health benefits.

For decades, we have known our houses are below the World Health Originations recommendation, they lack thermal protection which can pose health risks to occupants. Over 300,000 Kiwi homes have mould and damp, approximately 830,000 have sub-optimal levels of ceiling and underfloor insulation, while as many as a 1,000,000 lack wall insulation and up to a quarter of a house's heat escapes via the walls.

Nearly half of us say we live in a cold house. 30,000 children a year are admitted to hospital with preventable diseases linked to poor housing, with cold contributing to 1,600 New Zealanders' deaths each year. That's an incredible price to pay when we have the solutions ready and waiting.

Motu Economics senior fellow Arthur Grimes said the research on the Warm Up NZ programme showed retrofitting insulation prevented one death for every 1000 homes insulated.

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#### Job Creation

The IEA has identified building renovations associated with energy efficiency initiatives as a significant contributor to employment and the Covid-19 economic recovery. NZGBC has reported an average of 1000 jobs being associated with 120,000 homes being completed by the EECA insulation program. This increases to 1300 jobs when you include indirect jobs created.

Insulation industry body IAONZ have also supported these numbers through an evaluation of its members, confirming that 4300 people currently work in the industry, supporting 20 - 30% increase in the sectors employment.

Insulation and energy efficiency initiatives provide a national employment program with strong regional opportunities associated with the program.

The industry is also well placed up scale and to train new staff to meet the demand, IAONZ have now trained over 2800 people and the program is now accredited to provide Building & Construction Industry Training Organisation (BCITO) credits for the courses completed.

### Responses to consultation questions

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

We support the mandatory use of the NABERSNZ energy efficiency tool in commercial and public buildings, as has been the case in Australia for a decade. The experience in Australia has shown conclusively that the NABERSNZ certificates alter the behaviour and preferences of building owners and lessees, which leads to greater energy efficiency, and savings for users.

We also support the introduction of Energy Performance Certificates for residential buildings, as in the UK, as a way of driving purchaser and renter preferences through better information, leading to greater demand for energy efficient homes.

### 71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

The scale of energy use in buildings is very large. The residential sector alone consumes 65 petajoules of energy a year, of which 11 comes directly from fossil fuels and 45 comes from electricity. Around a third of this energy is used for heating, much of which could be eliminated with energy efficiency measures. This could be used to reduce and eliminate the

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use of fossil fuels in buildings and also free up renewable electricity that can be used to power electric vehicles, electric boilers and other applications as other sectors move from fossil fuels to electric power.

Freeing up energy from the building sector, usually at negative lifetime cost, means that renewable electricity is available for other sectors without the need to build as much additional renewable generation and transmission capacity, which comes at significant cost.

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

It is likely that most fossil fuel consumption in buildings is for space heating – with water heating and cooking other major uses. Therefore, energy efficiency retrofit measures – the most cost-effective of which are insulation – are an important tool for reducing direct fossil fuel use in buildings.

We support this move but think it misses the wider opportunity. If emissions from buildings are analysed purely through embodied emissions in their construction and direct use of fossil fuels on site, the analysis misses the larger contributions to emission reductions that buildings can make through energy efficiency

- reducing peak electricity loads and, therefore, the need for fossil fuel generation
- freeing up electricity generation and, thereby, reducing the cost of electrifying other sectors because it reduces the amount of new renewable electricity generation and transmission that will be needed

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

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Electrification of space heating is one part of the solution but, on its own, this just shifts the problem to electricity generation, which will already be under pressure from the electrification of transport and industrial process heat. As above, our view is that negative lifetime cost energy efficiency measures – mostly notably high levels of insulation in both new builds and retrofits – are the best solution to reducing the need for space heating in the first place.

## 74. Do you believe that the Government's policies and proposed actions to reduce building related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

No. In fact, actions that reduce emissions through improved energy efficiency help vulnerable communities because they mean homes can be kept warmer for less cost – both improving health and reducing living costs for those households. Capital cost for installing insulation and other energy efficiency retrofits is challenging for these households, which is why expanding and upgrading Warmer Kiwi Homes, the Healthy Homes Standards, Energy Performance Certificates, and the Building Code are important steps to achieving this.

## 75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?

This question is outside our expertise, although we would point out that Māori disproportionately live in poorly-insulated, hard to heat housing, and, as a result, face serious health issues and high heating costs. A suite of policies that ratchets up over time and improves housing quality across all housing types, especially low-income owner occupier (Warmer Kiwi Homes) and rentals (Healthy Homes Standards) is, therefore, going to be beneficial to Māori.

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

These are logical groups to focus on. Attention should be paid to the need to educate both groups on the negative lifetime costs of improved insulation. Energy Performance

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Certificates and GreenStar are important tools for raising consumer awareness, and driving demand for more energy efficient buildings.

# 77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

An investment in a deep retrofit pilot programme would be a smart use of government funds that would help make retrofits for effective and reduce costs. Insulation is a relatively mature technology, but work still needs to be done on 'deep' retrofit methodologies to cost-effectively bring existing homes up to a zero energy standard. There are technical issues around windows and frame ratios that need to be resolved through practical experience.

# 78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

We don't have any specific comments on the options, other than to note that glasswool insulation is made from largely recycled materials.

## 79. What should the Government take into account in exploring how to encourage low emissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

We would encourage the Government to note that

- a) insulation materials that are made from largely recycled material, such as glasswool, are on the market and able to meet growing demand driven by higher building standards and retrofits.
- b) Most emissions are not from the materials themselves but from the operation of buildings, with space heating being the largest energy consumer in residential homes. Therefore, concerns over embodied carbon shouldn't be considered in isolation, but on the whole of life impact on emissions that a product creates. A product may create emissions during production, but save many times as much during its lifetime.

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## 80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

The more certainty the Government can provide over a longer timeframe, the better the sector will be able to plan its workforce and supply needs to match the Government's agenda. Year to year funding for Warmer Kiwi Homes and one-off changes to the Building Code or Healthy Homes Standards can't drive investment. A 10+ year plan showing how standards will align and ramp up over time, enables this workforce planning and these investments.

## 81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

It's very important that we don't leave behind low-income owner-occupier homes and renters in this transition to low-emissions, energy efficient, healthy, and cheaper to run housing. The Government already has two important tools that can be built on to make sure these households benefit from the transition.

Warmer Kiwi Homes – targeting lower income owner-occupied homes. This programme needs to be expanded, both in terms of eligible households and in the retrofits subsidised, with a ramp up over time to get this housing sector up to the zero-energy standard over time. This will need to be planned to prevent the need for too much need for re-installation of insulation over the top of lower-level retrofits.

Healthy Homes Standards – targeting rental properties. The Healthy Homes Standards should be aligned with the Energy Performance Certificates and a pathway for ramping up of standards over time to reach the zero energy standard. This will also need to be planned to prevent the need for too much need for re-installation of insulation over the top of lower-level retrofits.

### 82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

Knauf Insulation encourages the Government to be bold on building energy efficiency. There can be few other opportunities to make significant emission reductions with negative lifetime costs, free up energy to make electrification of other sectors less expensive, and also I improve the health and financial wellbeing of families

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### **Emissions Reduction Plan**

Local Government New Zealand's submission on *Te hau mārohi ki anamata* – *Transitioning to a low-emissions and climate-resilient future* 

November 2021



### We are. LGNZ.

LGNZ is the national organisation of local authorities in New Zealand and 77 of New Zealand's councils are members. We represent the national interests of councils and promote the good governance of councils and communities. LGNZ provides advocacy and policy services, business support, advice and training to our members to assist them to build successful communities. Our purpose is to be *local democracy's vision and voice* and our vision is *to create the most active and inclusive democracy in the world*.

### Introduction

Local Government New Zealand (LGNZ) thanks the Ministry for the Environment (MfE) for the opportunity to have input into the development of Aotearoa New Zealand's first Emissions Reduction Plan (ERP).

This submission provides general comments and feedback on a number of the matters raised in MfE's consultation document, Te hau mārohi ki anamata – Transitioning to a low-emissions and climate resilient future.

This submission has been developed with input from the Council Climate Network – a network of council officers from across the motu (country) who are committed to working together to prepare their communities for climate change by sharing best practice and knowledge across the local government sector. A number of councils have also had input into this submission.

Climate change is a significant issue for local government. Councils and their communities are already taking action to mitigate and adapt to the impacts of climate change – and are committed to doing more. This submission sets out a number of suggestions for how central government can better partner with and support councils and their communities to address climate change. This is critical given that the impacts of climate change – and the impacts of transitioning to carbon zero – will be felt locally.

LGNZ acknowledges the significant amount of reform that is underway, coupled with the pressure of the ongoing response to the COVID-19 pandemic. However, climate change poses the biggest long-term challenge (and opportunity) to Aotearoa New Zealand's communities. This means that work to mitigate and adapt to the impacts of climate change must be prioritised by the Government as a matter of urgency. We urge the Government to ensure that publication of the first Emissions Reduction Plan is not delayed any further.

#### Climate Change Commission's advice

LGNZ notes that it isn't clear from the consultation document how the comprehensive Final Advice of the Climate Change Commission has or hasn't been accepted. It would be useful to understand the Government's rationale for accepting or rejecting proposals that were put forward by the Climate Change Commission.



### Local government's role

### Central and local government partnership to mitigate climate change

Although the ERP is a national-level plan, local government will play a significant role in Aotearoa New Zealand's transition to carbon zero. A considerable amount of the action needed to reduce emissions will be carried out and have implications at the local level. Many of the actions outlined in the consultation document will be delivered, supported or enabled by local government.

While the consultation document identifies that local government and communities will need to be empowered to support meeting carbon zero goals, we are concerned that this isn't well-reflected throughout the range of options that are identified for supporting the transition to carbon zero. There is little reference throughout the consultation document to the role that local government can and will play, and the support, tools, resources and funding it needs to meaningfully contribute to the Government's emissions reduction goals.

To support necessary action at the local level, the Government should partner – and not just collaborate – with local government. The Heads of Agreement recently entered into between the Crown and LGNZ commits the Crown to extending the partnership-based approach outlined in the agreement to other areas of reform that significantly impact local government.

The ERP consultation document doesn't reflect the need for partnership with local government as strongly as the Climate Change Commission's Final Advice did. For example, the consultation document doesn't include in its suite of options the Commission's recommendation that by June 2022 the Government publishes an agreement that sets out the mechanism for achieving necessary alignment between central and local government, and by December 2022 publishes a work plan outlining how alignment and funding will be addressed, with milestones for achieving the plan.

We strongly recommend that the final ERP includes these two actions – and that the agreement and plan be developed in partnership with local government.

Working in partnership with local government will help the Government to:

- Understand the level at which various policy levers are best applied locally, regionally or nationally.
- Drive and influence behaviour change by communities. Local government's proximity to communities means it's well-placed to advise on how necessary behaviour change can be encouraged and supported.
- Understand some of the inequities communities may face as a result of the transition, and how they can be supported through it.

#### **SUBMISSION**



#### Tools, guidance and resources

Local government has indicated to the Government for a number of years now that it would benefit from access to a range of tools, guidance and resources to support it (and its communities) to contribute to emissions reductions, including:

- Consistent tools for measuring, forecasting and reporting on emissions.
- Guidance on how to set emissions reduction targets for districts/regions that are aligned with national targets.
- Guidance on regulatory levers that already exist for councils to reduce emissions in their jurisdictions.
- Consistent frameworks for undertaking climate change governance assessments.
- Guidance on how to factor climate change considerations into business cases and investment decisions.
- Best practice guidance on behaviour change and communication approaches.

Any tools, guidance and resources for local government should be developed in partnership with councils to ensure that they are workable, practical and cost-effective.

LGNZ and Taituarā – Local Government Professionals Aotearoa are well-placed, as the peak local government sector bodies, to support central government with this mahi. We encourage the Government to partner with us to develop a suite of guidance, resources and tools to support climate change mitigation (and adaptation) action by councils, and to act as conduits between central government agencies and councils. LGNZ and Taituarā can help connect central government agencies with councils who can pilot or support the delivery of particular initiatives to contribute to emissions reductions.

#### Local government's roles and responsibilities

Councils have indicated to LGNZ (and the Government) for several years now that they would benefit from clearer guidance on the role local government is expected to play in reducing emissions. For example, to what extent will councils be responsible for abating emissions generated by land use change and transport? Will councils be expected to plan, incentivise, and fund changes to infrastructure to achieve emissions reductions? Will councils be required to produce emissions reduction plans?

Notwithstanding the need for central and local government to work together, what that working relationship looks like needs to be clearly defined – by clearly allocating roles and responsibilities. Without this, there is a risk that each party will do nothing while expecting the other to act.

Local government would also benefit from an understanding of central government's expectations on how emission reductions will be regionally distributed. For example, will Wellington and Southland both be expected to reduce carbon emissions or vehicle kilometres travelled at the same rate, or will this differ based on the relative concentration of factors such as urban density and emissions from agriculture?



### National direction

Much stronger national direction will be needed to achieve the Government's proposed emissions reduction targets. To achieve the Government's emissions reduction goals we need every local authority and community moving in a unified direction, at pace, starting as soon as possible. It seems very unlikely that this will happen across 78 separate local authorities without direction from central government.

This could involve central government providing clearer direction to local authorities about the need for, and consistent approaches to developing:

- Regional emissions reduction targets
- Regional vehicle kilometres travelled (VKT) reduction targets
- Regional emissions reduction plans
- Required levels of service for public transport and active transport infrastructure

National direction should be developed in partnership with local government and should adequately provide for regional differences – while driving unified progress, at pace.

### Local government funding

The Climate Change Commission warned in its Final Advice that cost pressures are likely to grow as councils respond to climate change and expressed a view that local authorities would need central government funding to manage the transition. The Future for Local Government Review Panel has also identified funding climate change action as a significant challenge for local government.

Local government has raised repeatedly the need for funding to be made available to councils to support mitigation action with and by their communities. Earlier this year a number of local government representatives attended MfE-led workshops on the ERP and strongly supported the establishment of a national fund to support local mitigation action. These local government representatives identified a number of factors for the Government to feed into the design of such a fund, including:

- Adequacy of funding is important, but it's also important funding is allocated for appropriate timeframes including to enable delivery of initiatives.
- The need to balance avoiding a funding 'lolly scramble', while recognising that contestable funding doesn't provide councils with predictability which is critical to planning.
- Funding allocations should reflect the different starting points that councils and communities will be at.
- A suggestion that a base amount of funding be provided to each council, with contestable top ups available for good business cases.
- The need to strike the right balance between funding for national priorities carried out locally versus local priorities.
- Prioritising projects that will generate the most emissions reductions, or support equitable



transition outcomes for the most vulnerable communities.

We will wait with interest to see what specific recommendations the Future for Local Government Review Panel makes around changes needed to funding and financing to enable councils to mitigate and adapt to the impacts of climate change. In the meantime, we encourage the Government to continue to ensure its various work programmes are aligned, and to engage with LGNZ and councils on developing solutions to this important issue.

### Aotearoa New Zealand's pathway to carbon zero

#### Vision, purpose and targets

LGNZ broadly agrees with the Government's proposed pathway to carbon zero and agrees that a comprehensive, multi-sector strategy will help us to move towards the 2050 target and improve broader wellbeing.

However, LGNZ is concerned that the consultation document doesn't yet include a comprehensive range of multi-sector options for addressing the issues and opportunities that exist. So far it appears that there is only a comprehensive range of options for reducing emissions from transport.

LGNZ is also concerned that the consultation document lacks detail on how each of the options identified for reducing emissions would be delivered – including by whom. Local government is prepared to work with the Government to identify the role it can play in progressing preferred options, and the support that local government will need to do that.

Our ultimate concern is the need for substantially greater investment by the Government to ensure Aotearoa New Zealand meets its carbon zero goals. We are concerned that the consultation document fails to identify how each of the actions it suggests will be funded. This must be addressed as a matter of priority. The Government will need to invest heavily in transformations that significantly reduce emissions and ensure that these are delivered. Otherwise there is a risk that investment will be spread too thin and that action will lack impact.

While LGNZ acknowledges the need for a range of policy tools to support emissions reductions, any new policy needs to complement the New Zealand Emissions Trading Scheme (ETS). Marketbased rules are more likely to drive the real change that is needed, as opposed to rules-based approaches which can be changed at the whim of politics.

Finally, LGNZ also encourages the Government to better reflect in its proposed vision the need for resilient communities, given the interrelationship between climate change mitigation and adaptation.



### Aligning the transition to carbon zero with other priorities

It is critical that work on the ERP aligns with other related central government led reform and policy work programmes, including the reform of the resource management system, Three Waters reform, the review into the Future for Local Government, the National Policy Statements for Urban Development and Freshwater Management and development of the National Adaptation Plan, to name but a few.

We make some specific suggestions on areas where the Government needs to ensure there is alignment throughout this submission.

LGNZ's view is that it's vital that work to reduce emissions aligns with work to build communities' resilience to the impacts of climate change – particularly given that these impacts are being felt by communities now. For this reason, we welcome the work that we understand the Government is doing to think about how revenues from the ETS can be recycled and allocated to adaptation action. These revenues could also be used to support a just transition for Aotearoa New Zealand's communities to carbon zero.

We encourage the Government to continue this work, and to think about the institutional arrangements that could be put in place to ensure that ETS revenues are allocated towards these purposes – and are safeguarded from being allocated to other priorities. We encourage the Government to align this thinking with the work we understand it is doing around the design of a national adaptation fund, as part of its work on the proposed Climate Change Adaptation Act.

### Principles for transition

LGNZ agrees that a just transition is critical and broadly supports the principles for transition that are identified in the consultation document.

As noted above, local government's proximity to its communities means it is well-placed to support the Government to understand the impacts the policy decisions it makes will have on communities, and how communities can be supported through the transition.

We support the inclusion of the principle that the Government's decisions be guided by an evidence-based approach. However, we are concerned that a number of the proposals in the consultation document haven't yet been quantified. The document itself identifies that a number of proposals need further assessment for effectiveness, value for money and implications for other Government priorities. This suggests that the Government will need to build its capability and capacity in respect of taking an evidence-based approach to climate change policy making going forward.

We recommend that the Government includes a principle that specifically addresses the need to identify the appropriate scale at which action is taken – whether that be local, regional or national. There must be consideration of how national policy trickles down into local action, and what the implications of national-level decisions are for local and regional communities.

We also recommend that the Government includes a principle on working in partnership with local government, including by making decisions that are guided by local perspectives, aspirations and objectives. This will help the Government to ensure that urban and rural communities are empowered to transition in line with local objectives and aspirations – which the consultation



document identifies as one of the Government's goals.

We also recommend that the Government adopts a principle that any new policy to achieve carbon zero is supported with appropriate national level funding, and an analysis of the funding that will be required at regional and local levels to support implementation.

### Working with Te Tiriti partners

Māori have considerable indigenous knowledge of ways of doing things to protect, enhance and restore the natural environment, and living without use of fossil fuels, that Aotearoa New Zealand can learn from. LGNZ strongly encourages the Government to support Māori to share that knowledge so it can be considered in forming our unique cultural response to the climate crisis.

Further, we agree that it is critical that the Government understands how the changes it is proposing will affect iwi/Māori. Local government's proximity to, and pre-existing relationships with iwi and hapū mean it is well-placed to support the Government with this. We encourage the Government to work in partnership with local government to support its work with Treaty partners at the local level.

We agree that iwi/Māori will need financial support from the Government to build their capability and capacity to contribute to Aotearoa New Zealand's transition to carbon zero. As the Treaty partner, the Crown should also support local government to build its capability and capacity to work closely with iwi/Māori on climate change mitigation action.

For example, we note that the consultation document recommends that the Government supports iwi/Māori to develop emissions profiles. While we support this, the Government could support iwi/Māori and local government to develop emissions profiles in partnership. This would enable iwi/Māori and local government to draw on their respective capabilities and knowledge and avoid unnecessary duplication of work at the local level – particularly given the significant amount of change and reform that both iwi/Māori and local government are currently grappling with.

### Aligning systems and tools

LGNZ agrees that aligning systems and tools will be critical to achieving the Government's carbon zero goals. Below are a number of suggestions for areas where alignment will be critical, and ways the Government can achieve alignment:

• LGNZ agrees that reforming the resource management system presents an opportunity to better support councils and communities to contribute to emissions reductions through resource allocation and land use planning decisions. We make further comments on the role of planning in enabling emissions reductions below. If the Government is to achieve its objective of better mitigating emissions contributing to climate change through the reform of the resource management system, it will need to continue to partner closely with local government. We are pleased that the Government has established a Local Government Resource Management Reform Steering Group to support this. Ongoing



engagement with the sector more broadly will also be critical.

- LGNZ agrees that behaviour change will be critical to achieving New Zealand's emissions reduction goals. While individual behaviour change will be important, most of the change that is needed is systemic change that will need to be driven by the Government and large organisations with sufficient reach and economies of scale. An interdepartmental board of Chief Executives, as provided for under the Public Service Act, could help to ensure that there is strategic oversight across the system.
- Introducing Vote Climate Change (as recommended by the Climate Change Commission in its Final Advice) is one way that the Government could ensure there is coordination of, and accountability for, its work programmes.
- As noted above, the Government needs to do considerably more work to identify how the actions it will take to reduce emissions will be funded. This must align with the work that the Future for Local Government Review Panel is doing to look at funding and financing options for local government particularly given that the Panel's Interim Report identifies funding climate change action as a significant challenge for local government.
- We agree that there is a need to build central government capability and capacity in the climate change mitigation space. The same is true for local government. We encourage the Government to work closely with the tertiary sector, LGNZ, Taituarā and other member bodies (such as the New Zealand Planning Institute) to develop a comprehensive plan to support this.
- Coordinated central government consultations with local government, iwi/Māori, the
  private sector and communities would be helpful. Throughout 2021 alone we've seen
  several consultations on various work programmes that have emissions reduction focused
  goals, including consultations on the Transport Emissions Reduction Plan, the
  Infrastructure Strategy and updates to the Building Code, to name but a few. It is critical
  that all these work programmes are aligning and ultimately align with the final ERP.
  Inconsistencies across programmes will be unhelpful and difficult for councils to reconcile.
- A joined-up approach by central government agencies will be critical for achieving New Zealand's carbon zero goals, but cross-party support is equally critical. This will help to ensure that the ERP is enduring. However, we add the caveat that a lack of cross-party support shouldn't defer the critical action on climate mitigation that is needed, now.
- More regular communications updates from the Government would help communities to understand progress on emissions reduction goals, and provide a means for communities to hold the Government to account on its progress. Real-time or frequently updated visual data, that is easy to understand and accessible, showing shifts towards achieving a successful transition would help both with accountability, and empowering all sectors of the community to see where progress is at and to make contributions.



### Planning

LGNZ agrees that planning decisions can help drive emissions reductions. LGNZ also welcomes the Government's objective of reforming the resource management system to, in part, better mitigate the emissions that contribute to climate change.

If the Government is to achieve that objective, it will be critical that the ERP aligns with the proposed new National Planning Framework. That should include providing clear direction on how emissions reductions can be achieved through planning decisions. In addition to direction, the Government will need to work with councils and communities to develop tools that support integrating consideration of emissions into planning decisions.

The new planning system will also need to provide clear direction on how trade-offs should be managed. The exposure draft of the Natural and Built Environments Act sets out 18 unprioritised outcomes for the natural and built environments – many of which are competing. While we acknowledge the inevitability of some competition between outcomes for the natural and built environments, clear guidance in the Act itself, or the National Planning Framework, on how trade-offs should be managed will be critical – particularly if the Government wants to meet its carbon zero goals.

We understand the Government is proposing to introduce a requirement for regions to prepare regional spatial strategies (RSSs) under the Strategic Planning Act. The RSSs are proposed to be long-term in focus (30 years) and identify areas that are suitable for development, need to be protected, require infrastructure and/or are vulnerable to climate change effects and natural hazards. RSSs will integrate with the Local Government Act 2002 and Land Transport Management Act 2003.

We understand the Government's current thinking is that RSSs will not be operative, but rather will guide NBA plans and coordinate investment from the public and private sector. We also understand that thought is being given to whether implementation agreements are a mechanism that could be used to commit partners to deliver investment. If RSSs are to actually deliver investments that contribute to emissions reductions, thought is going to need to be given to ways to secure their implementation. This may be particularly challenging if not all local authorities in a region are represented on the RSS joint committee. We encourage the Government to continue to work with local government on this.

There are some concerns within the local government sector that the scale of the reform proposed to the resource management system is so significant that, given capability and capacity constraints within the planning system, there is potential for the reform to not have the transformational impact the Government is hoping for. To ensure that the transition to the new system is successful and carefully planned – and doesn't result in unintended consequences – the Government will need to continue to work in close partnership with local government. We also encourage the Government to think about setting up a National Transition Unit to oversee and manage an effective transition to the new system.



LGNZ makes the following further points:

- Local government agrees that greater high to medium-density housing is a way to contribute to emissions reductions. However, local government needs significantly more funding and financing tools from the Government to support it to deliver the infrastructure that is needed to enable intensification of brownfields areas, and to deliver infrastructure projects that support zero carbon goals.
- Given strong signals we will head down a path of needing to factor emissions into planning decisions, councils and their communities will need consistent, easy to use tools that support them to do this. The development of these tools should be funded by central government, to ensure consistency and equity of access to them, but must be developed in partnership with local government.
- The tools that are developed to support the Government, councils and communities to understand the emissions associated with urban development decisions should incorporate the likely lifetime emissions of transport and energy use that would be enabled under different scenarios, and embodied emissions in buildings and infrastructure.
- The Government will also need to work with local government on the issue of how the costs of carrying out emissions assessments associated with urban developments and associated transport options are met.

### Transport

It is apparent from the consultation document that this is the sector for which there is the most comprehensive range of options for reducing emissions. However, we reiterate our earlier comments about our concern at the lack of detail about how each of the options would be delivered, by whom, and how they would be funded.

LGNZ welcomed the Climate Change Commission's recommendation that the Government provides local government with greater support to reduce communities' reliance on cars, including through legislation, removing regulatory barriers, and providing increased and targeted funding. We also welcomed the Commission's recommendation that the Government works with local government to set targets and implement plans to substantially increase walking, cycling, public transport and shared transport by the end of 2022.

LGNZ agrees that the Government must partner with iwi/Māori to co-design and develop solutions to reduce transport emissions. However, it must do the same with local government – since councils play a critical role in planning, funding and delivering transport networks and options, and play a key role in integrating land-use, urban development and transport planning. The relationship with local government must be more than just strong collaboration: it needs to be a partnership. Solutions need to be co-designed and co-developed.

In respect of the various options set out for reducing emissions from transport, we make the following comments:


- Any review of Regional Land Transport Plans needs to be done in partnership with local government. Thought needs to be given how a review of these plans aligns with changes to other planning processes that are being worked through as part of the reform of the resource management system.
- Greater funding and funding/financing tools will be needed to support the development of infrastructure and transport options that support emissions reductions. For example, in our submission on the Climate Change Commission's Draft Advice we expressed support for more funding from the National Land Transport Fund to support public and active mobility.
- Local government would welcome financial support from the Government to make public transport cheaper, and in appropriate cases free which we know a number of communities and community leaders are advocating for. Any review of the principles for planning and funding public transport, and review of the Public Transport Operating Model, needs to happen in partnership with local government. Any funding implications for councils of reducing public transport fares will need to be worked through.
- We agree in principle with the proposal to make changes to regulation to make it easier for local government to reallocate road and street space rapidly for public transport, walking, cycling and shared mobility in urban areas. The Government must work in partnership with local government to ensure that regulations designed don't deliver unintended consequences. Funding to support changes to and development of infrastructure will be critical.
- Any investigation of ways to raise revenue for transport in the future, including replacing the land transport funding system, needs to happen in partnership with local government.
- Price alone isn't going to generate the mode shifts that are needed. The public transport network also needs to be convenient for users. That's why integrated land use and transport planning is important. The proposed Strategic Planning Act could help with this. That's why it is critical that there is alignment between the ERP and the reform of the resource management system, and in particular the development of the National Planning Framework and consideration of the implications for emissions reduction goals of decisions made around implementation of RSSs.
- Mode-shift plans for urban areas need to be developed with councils. Although these plans will need to align across the motu, they will differ based on local and regional circumstances. Funding the delivery of these plans is going to be a critical issue local government will likely need considerably more funding from central government.
- Development of a national EV infrastructure plan should include local government, given the need for implementation across the country.

### **SUBMISSION**



### Congestion pricing/road user charging

While LGNZ welcomes the recommendation around "enabling congestion pricing and investigate how we can use other pricing tools to reduce emissions" this recommendation lacks ambition. Road pricing tools should be enabled and not just investigated further. Local government has been calling for road user charging for some time now – including as far back as 1993 in a joint Local Government New Zealand/Automobile Association/Road Transport Forum submission on Land Transport Funding.

Road pricing appears only under serious consideration for Auckland – acknowledging there is some signalling in the consultation document that it could be looked at for Wellington. We encourage the Government to work closely with other metropolitan councils on introducing road pricing elsewhere.

The Taituarā submission on the ERP consultation document makes a number of points around road tolling. We endorse these points and agree that making tolling of new and existing roads easier should be explored. Section 46 of the Land Transport Management Act could be amended to permit tolling of existing road use subject to consultation with the public. We agree with Taituarā that tolling new and existing roads could be a useful intermediate step to full road pricing.

# **Buildings**

In principle LGNZ is supportive of initiatives to reduce emissions from buildings – both operational and embodied emissions. However, the transition needs to be equitable and consistent with the Government's objectives around housing availability and affordability.

The Government must ensure that the ERP aligns with the Building Code. That should include alignment with the proposed updates to the Building Code that MBIE has recently consulted on around energy efficiency in buildings. We support the Taituarā submission on these proposed changes. We encourage the Government to further explore whether additional changes could be made to the Building Code to lift the energy efficiency of new buildings.

# Agriculture

There is broad acceptance within the local government sector that agricultural emissions need to reduce and that bringing agricultural emissions into the ETS is one way in which this could be achieved. However, the transition for rural and provincial communities needs to be carefully managed. This must include engaging early with rural and provincial communities on the changes needed. Local government can support this. It's also important that the Government understands and carefully manages the cumulative effects that a raft of Government-led changes are having on rural and provincial communities.

Signalling that unavoidable pricing mechanisms are coming soon is one way that the Government could incentivise action by those in the agricultural sector before pricing kicks in. Re-establishing the Projects to Reduce Emissions Scheme, instead of offsetting using only forestry, is one way that



innovation could be encouraged across farming (and also other sectors).

While forestry can be used to both offset residual emissions in hard to abate sectors, and increase our international commitments, LGNZ's view is that gross emissions reductions across all sectors should be the first priority. Carbon forestry should not be seen as a way to avoid or delay moves to decarbonise the economy.

Increases in carbon prices and the ability to fully offset emissions through the ETS are influencing forestry investment decisions and subsequent land-use change. Unintended consequences of greater forestry planting will need to be carefully managed, so that they are not irreversibly locked in – including impacts on biosecurity, fire risk, rural community resilience, export revenues and employment.

LGNZ also recommends that the Government should find ways to incentivise planting of permanent indigenous forests, as these provide multiple benefits, can be delivered at scale and are more aligned to our climate and ecological emergency. A carbon price differential between pine and native forestry is one way the Government could incentivise more permanent native forests. There should be some limits on the scale of exotic plantations in areas where permanent native forests would be more desirable.

# Waste

LGNZ broadly agrees with the consultation document's proposals around reducing emissions from waste. Partnering with local government on any initiatives to reduce emissions from waste is critical. We encourage the Government to work closely with the WasteMINZ Territorial Authorities Officers' Forum on progressing any options for reducing emissions from waste. This Forum is, for example, actively working on a standardised solution for kerbside collections across the country.

We also note that the Ministry is currently consulting on a proposed waste strategy and new waste legislation. This work must align with the ERP. Given multiple work programmes underway, care needs to be taken to ensure there are no inconsistencies between the proposed strategy and legislation and the ERP. Inconsistencies will create unnecessary complexity for local government.



# **Other points**

LGNZ makes the following further points:

- We support the need for more investment in research, science and innovation. However, it is critical that this investment supports the development and roll-out of practical tools that will support councils and their communities to take action. The need for action, now, means we need more than just ongoing academic studies.
- More support needs to be provided to small and medium sized businesses to ensure that they are not left behind in getting to know their emissions profile and supporting New Zealand's transition to a low carbon economy especially after the major stress that has been caused by the COVID-19 pandemic. Small and medium sized businesses influence New Zealand's culture significantly and will be critical to the transition.
- Local government has, for a number of years now, called for a national campaign to drive emissions reduction behaviour change similar to national road safety and smoke free campaigns, for example. Such a campaign would need to drive positive change and align with local aspirations and objectives. Local government is well-placed to support the Government with the development of behaviour change campaigns.
- The Government should further explore how it can support councils to work directly with schools to demonstrate and encourage sustainable practice.
- In principle we support the establishment of a behavioural change fund. This fund should be accessible by local government, so it is able to support and drive behaviour change with local communities. However, what isn't clear and needs to be worked through is the mechanism by which income for the behaviour change fund is generated.

| From:    | Lincoln Grant                        |
|----------|--------------------------------------|
| To:      | climate consultation 2021            |
| Subject: | Submission                           |
| Date:    | Tuesday, 23 November 2021 9:01:17 pm |

### **MFE CYBER SECURITY WARNING**

# This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

### Submission on Climate Change.

1/ There is an urgent need to need implement controls on carbon forestry to halt the conversion of our hill country sheep and beef farming land, it is ruining our region at an alarming rate.2/ Pine plantations are not a permanent forest, they have a limited lifetime after which they will deteriorate and become a huge fire risk. They will be an environmental disaster. They should not be allowed to off-set our emissions, emissions need to be reduced at source.

3/ Carbon credits currently being paid to investors to plant a mass of pine trees in our rural communities should be redirected to fund renewable energy projects, this would remove our reliance on coal and other fossil fuel to generate electricity and provide us a sustainable future. Exotic carbon forests will provide us with nothing and we will have short sightedly thrown away our future for no environmental gain.

4/ This needs urgent action, even though the current policy has added 3 million dollars to the price of our property we oppose it because it's just plain wrong.

Lincoln Grant

Tararua Farmer

| Logan Burton                          |
|---------------------------------------|
| climate consultation 2021             |
| Losing our communities                |
| Tuesday, 23 November 2021 10:09:24 pm |
|                                       |

#### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

To whom it may concern,

The current rate of afforestation that is occurring in New Zealand is devastating to our local rural communities. The once proud and hardworking rural generation is dwindling and taking it's sense of kiwi ingenuity with it. The "can do" attitude is being replaced with the "someone else will fix it" stance. This is all due to major planting of pines that is destroying our social fabric by systemically removing farmland from our agricultural industry.

Not only are we losing an entire way of life but also a means to support our country and the world. How can we ever hope to supply our planet with enough food if we are simply planting rich farmland into trees to support corporate pollution??

As a proud product of a rural community, I insist that you must reconsider the parliamentary actions of so few that is affecting so many. Please reverse or, at the very least, lower the current rate of afforestation so that we may yet feed ourselves and generations to come.



### Helping New Zealanders Build & Modify Safe Vehicles

Low Volume Vehicle Technical Association Incorporated PO Box 50600, Porirua Wellington New Zealand

By email to <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

24<sup>th</sup> of November 2021

To whom it may concern

### Low Volume Vehicle Technical Association (LVVTA) submission on Transitioning to a lowemissions and climate-resilient future

### A brief overview of LVVTA

Although not a government department, LVVTA is contracted to administer modified vehicle standards and the Low Volume Vehicle certification system on behalf of Waka Kotahi NZTA. LVVTA (an incorporated society) was established due to an impending change in vehicle regulations in the 1990s. Now, some 29 years after its inception, the LVV system, managed and developed by LVVTA, is generally considered to be amongst the best in the world for both vehicle owners and government alike. It is a system for modifiers, administered by modifiers, and supported by the regulator.

The LVVTA is comprised of eight member associations, Constructors Car Club Inc, Kiwi Trikers Social Club Inc, Motorsport New Zealand Inc, New Zealand Four Wheel Drive Association INC, New Zealand Hot Rod Association Inc, New Zealand Motor Caravan Association Inc, Sports Car Club of New Zealand Inc, and The Vintage Car Club of New Zealand Inc. Most of these are hobbyist groups which would be adversely affected by motor vehicle legislation enacted without their interests being represented during the development process.

### The LVVTA mission statement

"Promote and retain the right of New Zealanders to use motor vehicles on the public road that have been modified, or constructed in limited volumes, for sporting, recreational, special mobility, or business purposes"

### LVVTA position on Transitioning to a low-emissions and climate-resilient future

LVVTA supports Transitioning to a low-emissions and climate-resilient future in principle, however we would like to signal some possible flow-on effects from *Introducing measures to avoid New Zealand becoming a dumping ground for high emitting vehicles (page 70).* Without appropriate exemptions in place this could impact those wishing to purchase vintage, classic, and collectable vehicles from overseas.

Due to the nature and value of vintage, classic, and collectable vehicles, most owners usually only drive them on sunny days, weekends, or to attend organised events. Because of this, the bulk of these vehicles do not travel many kilometres each year and are not the primary vehicle being used for daily commuting by their owners. Therefore, their emissions are negligible in relation to pollutants emitted from the entire NZ vehicle fleet. The potential consequences of removing access to vintage, classic, and collectable vehicles from overseas will have a disproportionate effect on a hobby that relies on the continued availability of these vehicles.

The chart below is dated 2007, with the over 27 year graph showing vehicles that would be 40 years old in 2020 which best represents the age bracket the bulk of vintage, classic, and collectible vehicles fall in to. It would be reasonable to conclude that the kilometres travelled will have decreased further as the vehicles have aged.



#### TOTAL VKT BY VEHICLE AGE IN NEW ZEALAND, 2007

Data source: Ministry of Transport, 2008c.

LVVTA agrees with the need to decrease emissions from New Zealand's vehicle fleet, and with support from Waka Kotahi NZTA, LVVTA has developed an Electric Vehicle Standard. The purpose of this standard is to allow modifiers to convert vehicles that currently utilise internal combustion engines to battery and electrical propulsion. Like New Zealand's EV uptake, demand for this was minimal when the standard was first released in 2012, however the number of modifiers utilising new and emerging EV technologies to carry out EV conversions is increasing each year.

### Summary

LVVTA would like to see an exemption system put in place to allow the continued ability to purchase from overseas, vintage, classic, and collectable vehicles for the enjoyment of both the wider public (who would be able to view these vehicles being used on the road and involved in events or car shows), and for the owners' continued ability to collect, restore, maintain, drive, and enjoy their vehicles.

As vintage, classic, and collectable vehicles travel minimal kilometres each year, the quantity of CO<sub>2</sub> emissions is negligible and may be considered as offset by the increasing number of EV conversions being certified through the LVVTA system.



Picture - Classic 1970 MG BGT converted to an Electric Vehicle

### **Kind Regards**



LVVTA Operations Manager

#### The Green Masquerade - Emissions Reduction Plan

The emissions reduction plan is a heavily top down rules based system of control that is being sold as an opportunity for New Zealanders when in fact it is hiding a financial reset as agreed by central bankers at the Jackson Hole annual meeting of 2019, known as the **Going Direct Reset**. This includes central bank control of digital currencies, part of the proposed reset, which will '*manage*' the personal finances of New Zealanders.

'In cash, we don't know who is using a \$100 bill today. A key difference with the CBDC [Central Bank Digital Currency] is the central bank will have absolute control on the rules and regulations that determine the use of the expression of central bank liability, and we will also have the technology to enforce that.' Agustin Carstens, General Manager BIS 10 October 2019

### Jackson Hole, Wyoming

This is better described as wresting financial sovereignty from individuals turning them into no better than neo feudal serfs controlled by a technocratic class wedded to a fairy tale narrative of protecting the environment from human caused climate change. Quite how that is possible when climate has been changing for as long as the earth's existence is beyond reasoned thinking. It's a matter of 'trust' because the IPCC (an unscientific policy advisory panel) say so, meaning no questions will be tolerated.

<u>Given the decline in sunspot activity, and foreshortened growing seasons in Northern hemisphere</u> <u>countries particularly with regard to staples such as wheat and corn, this is absurd. The earth is</u> <u>currently going through a known cycle called a Maunder Minimum that has nothing to do with CO2</u> <u>emissions.</u> <u>A question</u>: *how is it the electorate will be sold the idea that their money will be programmed to allow them to buy only what their 'betters' will allow them and within a set vicinity?* This will make for fascinating propaganda which should eclipse the Unite Against Covid-19 budgets for applied behavioural psychology messaging and funding allocations.

Since 2019's Going Direct Reset agenda endorsement to prop up the failing financial system, the **Glasgow Financial Alliance for Net Zero** (GFANZ), another unaccountable UN sponsored quango, has been 'founded' this month. Bankers and industry are seeking to undermine the sovereignty of nations via the greening of economies, which will entail arranging agreeable conditions (making more unconstitutional legislation) for the international organisations and global institutions allocating investment funds to create 'sustainable' systems of energy and transport by indenturing national economies with further unpayable debt with the same kind of **Think Big** projects driven by the Muldoon government in the 70's and early 80's. Frankly the entire proposition is so duplicitous as to be risible. The PR plans will no doubt be huge, not to mention the nudging (applied behavioural psychology messaging to guilt the population into acting in the interests of the investment class and politicians).

What is not explained to the public at large is the system being proposed will flip our democracy on its head, so as to make it a pantomime comparable only to the present day charade in New Zealand parliament that plays at representative democracy but in fact has morphed into a government of occupation representing nothing but corporate interests, led by possibly one of <u>the most</u> incompetent cabinets in New Zealand history. Perhaps that is a reflection of the political party in question. The civil service is attempting to usurp the place of the market, aided and abetted by the ideologues in the executive, which is creating an expensive tyranny for which we are being taxed with no representation, Three Waters is a case in point. The capering and pontificating by the prime minister about safe drinking water does not make the actions of the government any less despotic, not to mention the completely nonsensical consultant report that came from Scotland.

The proposal sponsored by the Environment Ministry is best described as an information gathering exercise on how to best tighten the thumbscrews on New Zealanders, as well as small to medium size enterprises in the country, before aggregating the information to create prospectus documents for financial institutions like the World Bank and the IMF, partnering with central banks and industry (GFANZ) seeking to enrich themselves at the expense of the taxpayers and generations to come. Dick Turpin was more honest than present day elected and appointed representatives colluding with a corrupt institutional banking class.

In summary: how long before the government comes clean on their bypassing of consent by driving fear in the population through the proposed 'communications' to elicit the 'right behaviours' for this process to be implemented? Should we expect another cover up like the Royal Commission into the Christchurch massacre where ministers' testimony is sealed for 30 years or more? Will the state be transparent about the loss of quality of life including measuring increasing mental health issues and suicides as a result of nudging?

Good luck.

Submission of

### The Government's Emissions Reduction Plan will produce -

| Ka mate te taiao      | sick and dying environments                     |
|-----------------------|---|
| ka mate nga mea katoa | sick and dying ecosystems/biodiversity & people |

The Glasgow Climate Pact agreed recently when COP 26 wound up - is long on words and short on numbers and the few it contains is scary. It notes with 'deep regret' the failure of rich countries to come up with the long-promised US100 billion a year to help poor ones respond to climate change. While that is not a trivial sum it is way below what is needed and would represent less than one-fifth of 1 per cent of the US\$56 trillion the IMF will hit this year. New Zealand has the sixth-highest emissions per capita among developed nations. The four-fold increase to \$1.3b – over four years – to support countries most vulnerable to climate change last month would be an even smaller share of our GDP.

The Glasgow Climate Pact numbers recognises that limiting global warming to 1.5 degrees Celsius requires rapid, deep and sustained reductions in global green house gas emissions. Actearoa New Zealand could aim for net zero emissions by 2030.

### **Reducing Emissions in Agriculture:**

Government must stop pandering to the dairy industry when the solutions to the climate crisis are known and could be implemented today. Agriculture accounts for 91 percent of biogenic methane emissions and makes up 48 percent of Aotearoa's total greenhouse gas emissions. The Government say it will start taxing agriculture from 2025, under He Waka Eke Noa Primary Sector, Climate Change Action Partnership - with the sector getting a 95 percent discount.

Government need to work with farmers to reduce their impact on the climate by:

- supporting farmers to adopt regenerative farming practices that restore soil, water and air quality, including funding to help them to do this.
- phasing out the use of synthetic nitrogen fertiliser, which has fuelled the growth in dairy cow numbers over the past three decades.
- developing a fair system for the agriculture industry to pay for its emissions, like all other sectors of the economy through the Emissions Trading Scheme.
- ensuring food prices are affordable such as cheese, milk, butter, meat, vegetables, fruit and bread all of which could be grown and produced sustainably here.

### **Reducing Emissions in Fisheries:**

The Prime Minister's Chief Adviser in a recent report into New Zealand Fisheries Management has examples of case studies of fisheries in New Zealand and the benefits of Marine Protected Areas (MPA) It also discusses emerging international commitment of 100 per cent of the oceans to be fully protected by 2040. There was no mention of the Quota Management System (QMS) which is the principle under which these fisheries are managed. The report mentions the appointment of an Oceans and Fisheries Minister and Under Secretary to ensure the oversight of all marine activities within Aotearoa New Zealand's territorial sea and EEZ. There is nothing in the report saying how ecosystems/biodiversity will be restored, protected, maintained and enhanced. The only strong recommendation is to develop an Oceans Strategic Action Plan.

Wai 2027 is an intergenerational treaty of Waitangi Claim in the Northland Inquiry. This claim provide intergenerational evidence of thriving ecosystems/biodiversity in their customary fisheries in the Bay of Islands from 1930's - late 1980's. Today, there is almost nothing left, pipi beds are buried under sediment, all that remain are a few sea-birds and very few fish. When tuna was included in the QMS a Pakeha licence holder took a digger and dug into Te Hiringa – an eel nest meant for cultural/hui mate harvest only. This QMS licence holder removed everything from the site which kaumatua had nurtured for centuries.

- Minister of Fisheries to kick-start Oceans Strategic Action Plan by replacing the QMS with a system that restores, protects, maintains & enhances unique ecosystems and biodiversity for all inshore fisheries and throughout Aotearoa New Zealand's territorial sea and EEZ by working with Iwi/hapu, ENGO's and scientists for nature people who possess deep understanding of the importance of healthy ecosystems & thriving biodiversity and sustainable fishing practises that will ensure all restored & protected habitats of taonga tuku iho/all marine species and unique habitats will be around for future generations.
- Minister for Fisheries & Conservation to progress the Biodiversity Strategy some of us submitted to some years ago with input from ENGO's, Iwi/hapu and scientists for nature mai nga maungatapu ki nga moanatapu from the mountains to the sea throughout Aotearoa.
- Create more marine protected areas throughout Aotearoa/New Zealand's territorial sea and EEZ and restore, protect, maintain & enhance habitats of taonga.

### **Reducing emissions in transport:**

Reducing the impact transport has on the environment relies on the government making the right investments so it is safe, affordable and easy to get around without a petrol powered car:

- Government could set up permanent food markets in rural communities as an alternative to expensive supermarkets and encourage locals to grow & supply organic produce to it. This means less old cars on the road, less food miles and a boost for the local economy.
- Reduce public transport fares, include making buses and trains free for children and students.
- Stop importing petrol cars into NZ in 2030, once electric cars are more affordable for everyone.
- Encourage people to trade in their old, polluting cars to receive discounts on new electric cars, e bike or public transport passes.
- Invest in freight rail and clean coastal shipping to get trucks off our roads
- Stop investing in new urban motorways

### **Energy:**

- Aotearoa is fortunate to have an abundance of clean energy potential and we need to embrace it so we can stop burning fossil fuels. The government should:
- urgently end all coal use for industry and electricity generation
- change the rules and provide incentives for people to install solar panels and batteries in their homes
- put solar panels in all state homes
- expand the current support for solar panels on marae to enable more marae and other communities to build shared solar panels and share the free power from the sun.
- stop allowing new fossil gas connections in 2025
- work with households and businesses on energy conservation and efficiency, so we use less energy overall.
- Ban all fossil fuel electricity generation, including fossil gas, and build wind and solar instead.

Work with the energy industry and education providers to develop a clean energy industry training plan, so thousands of people can easily get training in the skills to install solar panels and other clean energy jobs.

### Te Tiriti o Waitangi:

To honour te Tiriti Waitangi, our emissions reduction plan needs to ensure:

Meaningful and appropriate consultation with Māori.

- Representation in relevant decision-making groups.
- Active protection of Māori rights, interests, whenua and taonga.
- Ensuring a process of reciprocity between the Crown and Māori.
- Proper consultation with Maori needs to be culturally appropriate and sufficiently resourced
- Consultation should be frequent, and should start at the beginning of government policy processes
- Consultation needs to uplift mana and encourage ongoing engagement. An appreciation of Maori values and their significance will reduce barriers for Māori and promote effective consultation
- Consultation needs to engage extensively with iwi and hapū across the motu to take account of the discrete and diverse needs of each takiwā. Proper resourcing for Māori to participate in consultation is necessary so that the onus does not fall back on Māori, who are often already under-resourced.

We need to ensure Māori representation on relevant governing bodies such as on boards, commissions, and councils. These entities should utilise a partnership model in their operation. This representation should be genuine and should not, for example, fall onto whoever present happens to have Māori whakapapa.

The Crown has a duty to actively protect Māori rights, interests, whenua and taonga. This includes ensuring that Māori have autonomy in the management of their whenua and their capacity to act as kaitiaki. Māori also have significant interest and investment in agriculture, forestry, and fisheries which are all areas that will be affected significantly by emissions reductions and the changing climate. Māori employment in these areas is high and this will need to be considered as effects on the Māori economy could increase unemployment and reduce income, if they are not well managed.

Honouring te Tiriti means ensuring a process of reciprocity between the Crown and Māori. This means a proper consideration of the distribution of risks, opportunities, and costs during transition. Māori are equal partners to the Crown in Te Tiriti, and this distribution should reflect that. Considering that Māori land has historically been exploited to benefit the New Zealand economy, the transition to zero carbon must avoid continuing this. Factors such as where infrastructure will be established, such as that of renewable energy, are relevant to this.

### **Just Transition**

A just transition means that the organisations and companies responsible for climate change must play a role funding and driving the response to climate change.

I support the just transition principles agreed by the International Trade Union Congress and endorsed by New Zealand's Council of Trade Unions:

- Equitable sharing of responsibilities and fair distribution of the costs across society. Polluters must pay.
- Institutionalised formal consultations with relevant stakeholders including trade unions, employers and communities, at national, regional and sectoral levels. We need to make decisions together, with everyone at the table.
- The promotion of clean job opportunities and the greening of existing jobs and industries through public and private investment in low carbon development strategies and technologies in all nations. There are huge opportunities for new clean jobs in Aotearoa including in renewable energy, regenerative and organic farming, forestry, and the high tech economy.
- Formal education, training, retraining, and life-long learning for working people, their families, and their communities. I support a Clean Energy Industry Training Plan to be developed by the Government, in partnership with the energy industry and education providers.
- Organised economic and employment diversification policies within sectors and communities at risk. I support expanding the Government's Just Transitions work nationwide, not just Taranaki and Southland.
- Social protection measures (active labour market policies, access to health services, social insurances, among others). We need a stronger social safety net including a guaranteed minimum income and investment in free healthcare.
- Respect for, and protection, of human and labour rights.
- Biodiversity

I support a nature-first response to climate change. This means:

- Planting and restoring native forests to suck carbon out of the atmosphere, not just lots of pine trees.
- Phasing out the use of nitrogen fertiliser, which underpins emissions from industrial dairying and also harms our rivers and lakes.
- Creating a blue carbon strategy that embraces climate action in our oceans.

We must all do our bit to ensure Aotearoa NZ will achieve its fair share of keeping to 1.5 degrees Celsius. We cannot delay any longer. Climate scientists tell us this is the very last moment we can act to prevent the climate crisis escalating out of control. We can start by slashing our greenhouse emissions swiftly and broadly to get to zero emissions within a generation to produce -

# **Oranga taiao, Oranga taonga, Oranga taangata** = healthy environments, thriving & healthy ecosystems/biodiversity and people!

thrive within Aotearoa - puta noa i te ao whanui!

I want a future for all mokopuna to



24 November 2021

Attn: Emissions reduction plan-submissions analysis team Ministry for the Environment PO Box 10362 Wellington 6143 New Zealand

(Uploaded via <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

### **RE: Emissions Reduction Plan Discussion Document**

### Introduction

- 1. This submission is on behalf of the Major Gas Users Group (MGUG). Nothing in this submission is confidential and members may choose to make their own submissions.
- 2. Membership of MGUG include:
  - Ballance Agri-Nutrients Ltd
  - Oji Fibre Solutions (NZ) Ltd
  - Fonterra Co-operative Group
  - New Zealand Steel Ltd
  - Refining NZ
  - New Zealand Sugar
  - Goodman Fielder
- 3. In terms of domestic gas demand members consume about 30 PJ per annum of natural gas, or about 18% of the gas supplied to the market in New Zealand.

### Summary of Submission

- 4. We have responded to only a limited set of the total questions posed in the discussion document. These are shown at the end of this submission.
- 5. The focus area of our submission is to argue for the role of natural gas in both the energy transition and emissions reduction pathways. In particular we disagree with the narrative that natural gas needs to be phased out of the energy system as a policy objective. This appears to be new, and isn't in the Climate Change Commission (CCC) final advice. The CCC recognised that New Zealand needed to decarbonize how it produces and uses energy and recognised a need to transform to an energy system that is *low emissions*, affordable and secure. However the CCC remained largely agnostic towards gas, recognising its importance and durability in the energy system.
- 6. Furthermore the CCC noted in evidence that for a number of heavy industries there are technical constraints on the degree to which fuel switching can be adopted due to high temperature requirements, the need for gas as chemical reactants, and the tightly

integrated nature of their activities<sup>1</sup>. These industries include some of our largest gas users, including our members, as well as Methanex. For these industries, gas needs to remain an energy option while various technical and economic barriers to switching are resolved. A policy environment that rules out energy options purely on the basis of its form rather than effect, is not one that leads to least cost transition while meeting social and economic objectives. Instead it is more likely to lead to withdrawal or cessation of investment and exit from New Zealand to overseas destinations.

- 7. A focus on phasing out gas, rather than a broader focus on decarbonising emissions also misses the wider opportunities offered by gas in meeting the multiple objectives of energy security, affordability, and economic and social wellbeing. The CCC, and the ERP discussion document acknowledges that New Zealand will not have a 100% renewable energy system, and non-renewable (fossil) energy will remain an important part of the energy mix. It would create a perverse outcome from an emissions perspective, to target gas as an energy source to be removed ahead of higher carbon emitting energy sources.
- 8. The role of New Zealand's indigenous gas resource will continue to be a critical element in meeting our emissions and energy targets and social and environmental outcomes:
  - a. As a lower emissions alternative to oil and coal, which it can displace;
  - b. As an important contributor to domestic energy supply security;
  - c. As a lower emissions consumer energy choice for residential and commercial use (where it is used directly for space heating, water heating, and cooking applications);
  - d. As an enabler for investment in low carbon gases (such as biogas and hydrogen) to reduce carbon intensity of natural gas; and
  - e. As a zero-emissions energy source when coupled with existing and developing technologies (carbon capture and storage (CCS), and methane pyrolysis).
- 9. Consequently we suggest that targets to reduce gas demand, including banning new gas connections are misplaced where there is a need to keep a wide range of options available.
- 10. If an Energy Strategy is to be progressed we believe this should start from the basis that lowcost, reliable and environmentally sustainable energy supplies are critical to a modern economy's success. An Energy Strategy should aim to mobilise investment and markets to accelerate transition to a sustainable future. It should also recognise the need to retain optionality, and keep open strategic flexibility when dealing with complex adaptive systems.
- 11. To complement an Energy Strategy we suggest that the Government considers negotiating a Gas Agreement with parts of the gas industry to incentivise earlier introduction of renewable gases into the gas networks in return for changes in economic regulation in the Commerce Act.

<sup>&</sup>lt;sup>1</sup> CCC – p14, Evidence CH5 reducing emissions energy and industry

# Transition away from Natural Gas – disruptive, not smooth

- 12. The difficulties in switching from gas to other energy sources in the industrial sector have been well documented. Our members use natural gas as a feedstock and/or, as process heat. As the technical paper produced by MBIE and EECA in January 2019, *Process Heat in New Zealand: Opportunities and barriers to lowering emissions* points out, large users such as our members, have invested in integrated technologies that require and are reliant on gas supply for the life of the plant<sup>2</sup>. Specific mention of these industries in the paper include petrochemicals<sup>3</sup>, and steel<sup>4</sup>. Industries with globally traded commodities<sup>5</sup> are also considered at risk of emissions leakage under the New Zealand Emissions Trading Scheme (NZETS).
- 13. For example, of the 181.11 Petajoules (PJ) of indigenous gas produced in 2020, 46.23 PJ (25.5%) went into non-energy use, principally methanol, ammonia, and hydrogen peroxide product. These are produced in capital intensive, highly integrated plants. Technically, gas could be replaced by green hydrogen, but economically (short and long run economics) green hydrogen is not a feasible option.
- 14. Mandating the phase out of natural gas while there are no technical or economically feasible alternatives is not going to accelerate transition. Instead it will encourage production to move offshore more quickly because such a policy leaves no room for innovation that could allow gas to be retained as an energy choice. Shifting the supply chain to other parts of the world is an economically rational action to take despite the CCC saying otherwise:

# *"emission pricing alone fails to achieve many low-cost emissions reduction opportunities, because real world investment decisions in our economy and society do not always consider total-lifetime costs"<sup>6</sup>*

- 15. In making this statement the CCC fails to understand the international context that many of our larger, energy intensive industries operate in. For these organisations who find reduced options in fuel choices total lifetime costs *are considered*, but within a global supply chain. For these organisations the alternative to gas is not necessarily to switch to renewable energy, but to shut down and supply the market with products from locations outside of the country.
- 16. A number of our members fit this category. They are overseas-owned (or have overseas ownership) and capital is allocated on the basis of their regional or global opportunity rankings. Their New Zealand operations and market are often minor in comparison to the rest of their portfolios. With unpredictable, and/or business challenging policy settings, this

<sup>&</sup>lt;sup>2</sup> EECA, MBIE – Process Heat in New Zealand: Opportunities and barriers to lowering emissions, 2019 – p10

<sup>&</sup>lt;sup>3</sup> This includes from our membership, Ballance Agri-Nutrients

<sup>&</sup>lt;sup>4</sup> New Zealand Steel

<sup>&</sup>lt;sup>5</sup> All of our members

<sup>&</sup>lt;sup>6</sup> Discussion document – p21

shortens their investment horizons in New Zealand, particularly where the alternative is to import<sup>7</sup>.

17. The flow on effect of loss of confidence that natural gas can remain an energy option in New Zealand, leads to a self-reinforcing spiral of reduced investment to maintain even what already exists. This is explained by the findings of the Gas Industry Company (GIC), in its wholesale gas market settings report. This report was commissioned by the Minister of Energy asking whether current arrangements in the gas wholesale market were fit for purpose<sup>8</sup>. The GIC concluded that (gas) fit for purpose for the transition means:

"sufficient petrochemical/industrial demand remaining to support the required investment in gas development and production and to ensure the required minimum volumes of gas flow through the system during the transition so that natural gas is available:

- to support electricity generation until no longer required (the current assumption is that this will be until 2030, given the Government's 100% renewable electricity target, but with some leeway to extend if required)
- to supply users who need to keep operating in New Zealand to support our economy and society and have no suitable alternative energy supply, or until an alternative becomes achievable
- to 'mass market' users including commercial, residential and agricultural operations, albeit at reduced volumes over time"
- 18. These findings demonstrate that balance is needed between meeting emission goals and security and affordability of energy supply when considering the role that natural gas plays in New Zealand's energy system.
- 19. As the pending closure of the refinery also demonstrates, closing down industry might help with New Zealand's emission profile, but it achieves nothing for global emissions reduction, and it is accompanied by loss of regional economic activity, loss of high paid employment, reduction in a wider skills base, and increased exposure to longer and potentially fragile international supply chains.

<sup>&</sup>lt;sup>7</sup> Refining NZ, Ballance, OJI, Steel, NZ Sugar all have faced, of face these choices.

<sup>&</sup>lt;sup>8</sup> Gas Industry Company – 30 September 2021 "Gas Market Settings Investigation- report to the Minister of Energy and Resources"

# Phasing out Fossil (Natural) Gas – misplaced objective

- 20. The objective of the Climate Change Response Act (CRA) is to provide a framework by which New Zealand can develop and implement clear and stable climate change policies to contribute to global efforts to limit global average temperature increase.<sup>9</sup> This objective has been distilled down to establishing a pathway to net zero carbon emissions by 2050 for long lived gases.<sup>10</sup>
- 21. The CCC provides advice to the Minister on setting emissions budgets. That advice has to give regard to a number of matters (Section 5ZD), including economic and distributional impacts as well as existing technology and anticipated technological developments.<sup>11</sup> Emission budgets may be revised if one or more significant changes have affected the considerations listed in Section 5ZD on which an emission budget is based.
- 22. Given the Act's purpose of *reducing net carbon emissions* whilst having regard to economic and societal impacts, it is perplexing to find that the consultation document should have numerous references to phasing out "fossil" gas *from the energy system*.<sup>12</sup> This appears to be a misinterpretation of the CCC advice. The CCC advised on an objective to decarbonise the energy system (outcome), while remaining agnostic about the means.

"Aotearoa must decarbonize **how it produces and uses** energy. It needs to transform to an energy system that is **low emissions**, affordable and secure<sup>13</sup>"

23. While there are undoubtedly historical causal linkages between energy systems and emissions, these have been determined by economics as much as they have by science and technology. Conflating the two separate issues of energy and emissions, is likely to continuously undermine both the energy objective (secure, affordable, sustainable), and economic objectives (least cost pathway).

# Gas delivers energy security, affordability, and better environmental outcomes than coal or oil

24. Natural gas has been inextricably bound up with the economic and social wellbeing of New Zealand and New Zealanders since it was first brought into the energy system over 50 years ago. In 2020 it represented just over 20% of New Zealand's primary energy supply. The use of indigenous natural gas has reduced the need to import or mine domestic coal and oil, and has reduced reliance on imported energy and supported the development and growth of renewables in the energy mix<sup>14</sup> (*Figure 1*). 2021 has seen a demonstration of the importance of natural gas in displacing coal fired generation. The reduced supply also directly impacted

<sup>&</sup>lt;sup>9</sup> Climate Change Response Act 2002 – S3 Purpose

<sup>&</sup>lt;sup>10</sup> CCRA – 5Q

<sup>&</sup>lt;sup>11</sup> CCRA - 5ZC (2)

<sup>&</sup>lt;sup>12</sup> It is a common theme pushed for by the Commission and referenced repeatedly in the discussion document (pp16, 84, 85, and 93)

<sup>&</sup>lt;sup>13</sup> CCC Final Advice Chapter 15 Summary, p274 (our emphasis added)

<sup>&</sup>lt;sup>14</sup> For example fast start gas peaking plant supports intermittent wind generation



gas market participants, including key export industries who faced either reduced output and/or significantly higher energy prices.

Figure 1: Indigenous gas contribution to energy independence and carbon minimisation<sup>15</sup>

- 25. The New Zealand Total Primary Energy Supply (TPES) has moved from a 70:30 fossil: renewable split in 2000 to 60:40 in 2020<sup>16</sup>. The CCC proposes a different target based on a measure that currently isn't reported on in the New Zealand Energy Statistics. It advises that a National Energy Strategy should aim for 50% for energy consumed by 2035 to come from renewable sources<sup>17</sup>. This uses Total Final Energy Consumed (TFEC) rather than TPES as the relevant metric. While adding unnecessary confusion to a target with a measure which currently isn't collected or reported on, it nevertheless makes clear that the New Zealand energy system will continue to rely on non-renewable energy sources if it is to continue to balance economic and social objectives with emissions objectives.
- 26. Given that the New Zealand energy system will continue to have non-renewable sources in its mix, then the bias for non-renewable energy should be towards gas in favour of coal or oil to achieve the lowest carbon intensity. At 54 kg CO<sub>2e</sub>/ GJ, gas produces nearly half the emissions of coal fuel (90 kg CO<sub>2e</sub>/ GJ), and 75% of light fuel oil (73 kg CO<sub>2e</sub>/ GJ). This makes the objective to phase out natural gas from the energy system as not only least helpful to decarbonising the energy system, but also least helpful in providing domestic energy supply security.

<sup>&</sup>lt;sup>15</sup> Source: MBIE - Energy In New Zealand

<sup>&</sup>lt;sup>16</sup> Source: MBIE – Energy in New Zealand

<sup>&</sup>lt;sup>17</sup> Discussion document p84. Note that this is a target for energy consumed, not total primary energy supply

## Wider Energy System Impacts

- 27. Other flow-on effects from phasing out gas include increased pressure on other parts of the energy system to step in as substitutes. This can create perverse outcomes.
- 28. This includes an assumption that greater electrification is a straightforward alternative. The consequences on the electricity infrastructure (generation, transmission, and distribution) however aren't straightforward. For example, switching away from gas might require a greater reliance on coal or gas fired generation<sup>18</sup>, as well as a need to upgrade electricity transport capacity (transmission and distribution). Further downstream, asset stranding for residential, commercial, and industrial consumers will add further economic costs across the economy. The Gas Infrastructure Future Working Group for example, based on CCC analysis, estimated a potential \$5.3 billion cost to consumers from the changeover for space and water heating appliances in homes and buildings<sup>19</sup>.
- 29. To give some idea of the scale of grid investment required for just the commercial and residential sector, 15 PJ (4,167 GWh) of gas is consumed in the North Island. This compares to approximately 15,400 GWh of electricity demand for the same sector<sup>20</sup>. Switching from gas to electricity in this sector adds another 27% of electricity demand (including peak demand on which infrastructure is sized) across the electricity distribution system infrastructure to meet household, residential and commercial electricity demand.
- 30. We accept the CCC advised that only new gas connections should be banned and it didn't contemplate wholesale switching away from gas connections. However we don't believe that an orderly wind-down of the gas industry, which is implicitly assumed in the advice, is likely. The gas infrastructure as noted by the GIC is reliant on industry and major users supporting the system. The residential and commercial sector is less than 10% of the demand which is insufficient to support the maintenance of gas infrastructure. Demand destruction in industry will create a tipping point for the residential and commercial sector where the only alternative is to either convert to LPG, or switch to electricity.
- 31. Switching to electricity also creates a perverse emissions outcome when the marginal generation continues to rely on thermal generation<sup>21</sup>. Direct use of gas for space heating, water heating, and cooking is close to 100% efficient on a full fuel cycle basis, whereas using gas (or coal) taking into account conversion efficiency and transmission losses, the energy

<sup>&</sup>lt;sup>18</sup> Biomass, instead of coal could be an alternative as suggested by Genesis

<sup>&</sup>lt;sup>19</sup> Working Group Future Working Group | Findings Report | 13 August 2021 – p2

<sup>&</sup>lt;sup>20</sup> Total electricity demand in New Zealand in these sectors was 22,053 GWh in 2020 across both islands with an estimated 70% of that being in the North Island. Sources; Energy in New Zealand and <a href="https://www.emi.ea.govt.nz/Retail/Dashboards/W5QQSB?RegionType=ISLAND&RegionCode=NI&\_si=db|W5QQSB.v|2">https://www.emi.ea.govt.nz/Retail/Dashboards/W5QQSB?RegionType=ISLAND&RegionCode=NI&\_si=db|W5QQSB.v|2</a>

<sup>&</sup>lt;sup>21</sup> The CCC assumes that 100% renewable electricity generation should continue to be an "aspirational" goal.



efficiency is around  $36\% - 45\%^{22}$ . For the same amount of delivered energy, direct use of gas has 20%-42% of the carbon footprint of electricity (*Figure 2*)<sup>23</sup>.

Figure 2: Fuel Cycle Comparison - Consumer Energy

# Goal is to decarbonise fossil energy- not eliminate it

- 32. While we have touched on a few examples of why phasing out gas might be a suboptimal outcome within a wider national context of least cost approach, there are other opportunities that gas creates towards decarbonisation, including:
  - a. Ensuring that coal is not used as fuel for generation;
  - b. Providing electricity supply security by backing intermittent renewables (especially wind generation);
  - c. Gas can be used to make methanol and blended for use in existing petrol and diesel internal combustion engines. This would displace between 3-15% of petroleum derived liquid fuel in petrol engines and up to 50% in diesel, with the associated reduction in import dependence of transport fuels. This is technically and commercially proven. The infrastructure requirements in New Zealand are minimal

<sup>&</sup>lt;sup>22</sup> Rankin thermal efficiency assumed as 36% is approximately and transmission and line losses is approximately 7%. Modern open cycle gas turbine might improve thermal efficiency to 45%.

<sup>&</sup>lt;sup>23</sup> Heat pump use for space heating would offset some of this, but heat pumps don't cook dinners, nor would they displace all space heating.

(fuel blending tanks). The current barrier is regulatory, which limits alcohol blending to 3% by volume;

- Methanol, ammonia<sup>24</sup>, and Liquid Natural Gas (LNG) are also solutions for coastal shipping to reduce reliance on fuel oil and assist New Zealand in meeting e the requirements of MARPOL Annex VI<sup>25</sup>;
- e. Biogas and hydrogen can be blended with natural gas to preserve the infrastructure option to transition to renewable gas sources. Currently there are trials being proposed by First Gas. Up to 20% blending of hydrogen is deemed feasible for existing pipelines and appliances, offering an immediate opportunity for decarbonising natural gas systems;
- f. Technologies such as pyrolysis of natural gas to produce "turquoise" hydrogen and graphite/carbon nanotubes are at pilot or semi-commercial scale<sup>26</sup>. Turquoise hydrogen has a potentially much lower cost to produce than green hydrogen.

## Emerging Opportunity - Methane Pyrolysis

- 33. This section provides an example of an emerging opportunity to use natural gas and the role it can play to create value while minimising emissions.
- 34. Methane pyrolysis is a process that converts natural gas into hydrogen and *pure carbon*. The carbon form depends on the process used, and can range from carbon black, activated carbon, or carbon filaments (nanotubes). An example of this technology and its technology maturity is explained by a company announcement on the ASX from Eden Innovation Ltd (ASX: EDE).<sup>27</sup>
- 35. In the Eden Innovation process, hydrogen is considered a by-product because the market value of the carbon is much higher than it is for hydrogen. This market feature creates an opportunity for accelerating hydrogen uptake by allowing it to be priced at a competitive level with fossil gas. At a nominal natural gas price of \$10/GJ this can price turquoise hydrogen at a short run marginal cost of \$1.43/ kg for price parity. By way of comparison, the 2019 MBIE green paper "A vision for hydrogen in New Zealand" used \$3/kg as the cost of electricity component<sup>28</sup>. Other studies suggest that hydrogen costs of around US\$1.40/ kg could only be attainable by 2050.
- 36. With this technology the *hydrogen economics aren't determined by the cost of production of hydrogen*. Instead it is being determined by the cost of production of the more valuable

<sup>&</sup>lt;sup>24</sup> Energy News – "More shipping firms look to ammonia"-Greta Yeoman - Fri, 12 Nov 2021

<sup>&</sup>lt;sup>25</sup> New Zealand has announced its intention to ratify MARPOL Annex 6. Annex VI seeks to limit air pollution from ships around ports and harbours. It came into force in 2005: MARPOL Annex VI Treaty | Ministry of Transport

<sup>&</sup>lt;sup>26</sup> See <u>https://hazergroup.com.au/</u>

<sup>&</sup>lt;sup>27</sup> <u>https://edeninnovations.com/investors/#announcements</u> 22 October 2021 – Growing Demand for Eden's Low CO2 technologies and products.

<sup>&</sup>lt;sup>28</sup> MBIE 2019 - A vision for hydrogen in New Zealand, Figure 7, p22

carbon product enabling it to reach energy cost parity much more rapidly than what is assumed using green hydrogen technology.

- 37. A technology demonstration was considered for New Zealand given that it is already being used in the United States by Eden Innovation. While the technology itself requires several more steps to get to a maturity level equivalent to water electrolysis<sup>29</sup>, a key barrier for demonstrating this in New Zealand at the moment is in finding a commercial offtake for the carbon nano-tubes produced.
- 38. This example illustrates why New Zealand policy settings should look to separate resource development from its use effects. In the aforementioned case, natural gas is a large opportunity for New Zealand rather than a problem.

### Energy Strategy

- 39. An idea that seems to have general support across submissions to date on the CCC advice, is that MBIE should facilitate the development of a national energy strategy. MGUG understands the process for developing a strategy is yet to be determined however there is currently no clear statement what an energy strategy is meant to achieve or what its foundation will be. The only real clarity is that it will be developed in partnership with Iwi/ Maori and that it will be collaborative with other stakeholders to access "their experience and knowledge"<sup>30</sup>.
- 40. This lack of detail makes it difficult to determine whether the idea should be supported, particularly if the notion of what an Energy Strategy should be is neither immediately apparent, nor shared.
- 41. MGUG considers that if an energy strategy is to be successful, its underlying premise should acknowledge that it starts from a basis or foundation that low-cost, reliable, and environmentally sustainable energy supply, is critical to a successful modern economy. As part of its underlying premise, a national energy strategy should also aim to mobilise investment and markets, to accelerate transition to a sustainable future. Ideally it should also recognise the need to maintain optionality and strategic flexibility, particularly when dealing with complex adaptive systems like our economy, our society, and our natural systems.
- 42. The concept of an Energy Accord has also been generally discussed, the benefit being that an Accord can be used to place mutual obligations on parties to achieve a common goal of emissions reductions. The CCC did not consider an Energy Accord as an alternative to an Energy Strategy so it's difficult to comment whether this might be a better option for achieving buy-in and action.

<sup>&</sup>lt;sup>29</sup> Using the Technology Readiness Level (TRL) index which is a globally accepted benchmarking tool for tracking progress and supporting development of specific technology through the early stages of the innovation chain, from blue sky research (TRL1) to actual system demonstration over the full range of expected conditions (TRL9), the Eden Innovation methane pyrolysis we assess to sit at TRL6.

<sup>&</sup>lt;sup>30</sup> CCC final advice p274

### Gas Agreement to accelerate transition

- 43. A potential initiative for mobilising private sector investment to accelerate transition would be to consider establishing an agreement between Government and gas pipeline owners (that could be extended to include the upstream) to incentivise early adoption of renewable gases in the gas system.
- 44. Currently First Gas are exploring opportunities for introducing renewable gases (hydrogen or biogas) into their networks. To date, this has amounted to desk top studies but no clear pathway has emerged as to who would be taking the risk to invest in producing renewable gases. Pipeline owners are simply preparing to ensure that their pipelines will be capable of transporting renewable gases (or blends) safely.
- 45. This raises a question whether pipeline owners are appropriately incentivised by the current regulatory framework to pursue this "repurposing" and support existing gas infrastructure.
- 46. We suggest a review of the Commerce Act (and accompanying Part 4 regulations) should be considered to make the regime more fit for purpose for gas pipelines under the circumstances that exist today, rather than those at the time the regulatory framework was first put in place. A review could potentially consider (for example):
  - The value of a longer regulatory period to provide greater certainty for long term investment;
  - Changes to allowable opex and capex, to meet repurposing needs;
  - Different rates of return on repurposing investment allowed.
  - Appropriate incentives e.g. some at risk to revenue so as to incentivise infrastructure owners to achieve greater penetration of renewable gasses into their systems.

### Specific Question responses

47. We have attached an addendum below, giving template responses to some of the specific questions asked in the consultation document. We haven't attempted to respond to all of the questions. Primarily it's because not all the questions reflect the concerns of our members (such as forestry planting, or transport). Also a number of questions would invite the same response so we elected to avoid repetition.

Yours sincerely



Richard Hale/Len Houwers Hale & Twomey Ltd/Arete Consulting Ltd

Secretariat for the Major Gas Users Group

| QUESTIONS |   |
|-----------|---|
| 1.        | Do you agree that the emissions reduction plan should be guided by a set of<br>principles? If so, are the five principles set out above the correct ones? Please explain<br>why or why not  |
|           | We agree that a principle-based approach to emissions reduction planning should<br>guide decision making. But it is difficult to see how the proposed principles are useful<br>and supportive for steering the emission reduction plan to achieve emissions<br>reductions. The approach also lacks a coherent hierarchy to determine which<br>principles matter more than others. |
|           | We therefore suggest the following hierarchy of principles as aligning with the target of achieving emissions reduction:  |
|           | First Principle   |
|           | Emissions reduction should occur without undermining the sustainability of other natural capital.   |
|           | Second Principle  |
|           | Reductions should be assessed using an evidence-based approach. This includes having an effective measure on whether net emissions are being achieved, and regular monitoring of outcomes.  |
|           | Third Principle   |
|           | Natural systems are complex and adaptive. Retaining policy flexibility is a necessary imperative if we are to maintain the capability to respond to new information. Mitigation options need to be preserved so as to retain strategic flexibility on the means to achieve outcomes. This should be supported by:   |
|           | <ol> <li>Stable and predictable policies on ETS scheme settings.</li> <li>Remaining agnostic as to means to achieve emission outcomes</li> </ol>  |
|           | Fourth Principle  |
|           | Impacts created by Emissions Reduction Plans on other parts of the political economy should be managed through separate economic and social policy levers (tax system, subsidies, redistribution, etc).   |
| 3.        | In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?   |
|           | It is unclear what "gap" refers to. We assume it to mean the difference between<br>current and proposed emissions pathways to achieve net zero carbon emissions by<br>2050.   |

| QUEST           | IONS   |
|-----------------|--|
|                 | In framing the question it is also important to consider whether there are committed and proposed actions that should be removed to help close the gap.  |
|                 | MGUG's submission is focused on energy opportunities so we haven't considered<br>the entire list of actions. However, as outlined in the body of our submission we<br>suggest that removing fossil gas from the energy system should not be an objective.<br>Rather the focus should be on decarbonising fossil energy emissions.  |
|                 | For specific gas-related advice we don't support banning new gas connections,<br>nor do we support an objective to phase out natural gas from the energy system. As<br>outlined in the body of our submission, options for decarbonising our energy system<br>should be left open with energy system outcomes determined by a capped emissions<br>profile.   |
|                 | In terms of what is missing and what could be added:   |
|                 | <ul> <li>Regulation for including marine-based sequestering technologies such as open ocean seaweed farming as a powerful complement to land use technologies (including forestry planting)</li> <li>Regulation for Carbon Capture and Storage to enable existing technologies for sequestering carbon to be available</li> </ul>  |
|                 |  |
| 4.              | How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?   |
|                 | We are unclear as to why an emission reductions plan needs to promote nature-<br>based solutions. If we follow our suggested principles in Q1, all possible solutions<br>need to be available and distinctions between "natural" and other solutions should be<br>avoided. Our response to Q3 highlights two solutions; one "natural", the other using a<br>geo-engineering solution. Both offer complementary and effective solutions for<br>climate without undermining other natural capital. |
| Energy Strategy |  |
| 58.             | In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?   |
|                 | As covered in more detail in the body of our submission, a national energy<br>strategy should aim to mobilise investment and markets to accelerate transition to a<br>sustainable future. It should also recognise that options need to remain open to keep<br>strategic flexibility when dealing with complex adaptive systems.   |

| QUESTIONS                             |  |  |
|---------------------------------------|--|--|
| Setting Targets for the energy system |  |  |
| 60.                                   | What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?   |  |
|                                       | An energy system should be an emergent outcome from net zero emissions policies that follow a least cost pathway.  |  |
|                                       | It is unnecessary and potentially counter-productive to target renewable<br>percentages. Our current electricity system by way of example, ended up having a<br>high percentage of renewable generation, not because this was targeted as an<br>outcome, but as a result of fuel choices determined by long-run economics (least-cost<br>pathway)  |  |
|                                       | Similarly the energy mix will be what it needs to be to achieve net emission<br>outcome targets. What matters is least cost pathway within an effective ETS scheme<br>to achieve the outcome.  |  |
| Phasin                                | Phasing out fossil gas while maintaining consumer wellbeing and security of supply   |  |
| 61.                                   | What are your views on the outcomes, scope, measures to manage distributional<br>impacts, timeframes and approach that should be considered to develop a plan for<br>managing the phase out of fossil gas?   |  |
|                                       | The body of our submission explains why phasing out natural gas shouldn't be a policy objective, and why focusing on emissions reduction targets creates better options for utilising natural gas that help the decarbonisation agenda.  |  |
| Reducing fossil fuels in buildings    |  |  |
| 72.                                   | The Building for Climate Change programme proposes capping the total emissions<br>from buildings. The caps are anticipated to reduce demand for fossil fuels over time,<br>while allowing flexibility and time for the possibility of low-emissions alternatives.<br>Subsequently, the Commission recommended the Government set a date to end the<br>expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are<br>your views on setting a date to end new fossil gas connections in all buildings (for<br>example, by 2025) and for eliminating fossil gas in all buildings (for example, by<br>2050)? How could Government best support people, communities and businesses to<br>reduce demand for fossil fuels in buildings? |  |

| As outlined in the bulk of our submission we think that setting objectives to   | QUESTIONS |  |
|---|-----------|--|
| restrict natural gas opportunities undermines the opportunities to reduce national<br>emissions. We don't support setting a date for ending new connections. Rather the<br>option to use gas provides a greater incentive for gas producers and gas pipeline<br>companies to ensure that gas can have a role to transition the energy system and<br>reduce emissions in a more effective and equitable way. |           |  |

| From:    |                                     |
|----------|-------------------------------------|
| То:      | climate consultation 2021           |
| Subject: | Carbon offsetting                   |
| Date:    | Sunday, 21 November 2021 1:45:29 pm |

### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

The government needs to limit carbon offsetting.. so a big YES to the submission . From a former proud Farmer

| From:    | mark wallace                        |
|----------|-------------------------------------|
| To:      | climate consultation 2021           |
| Subject: | Submission                          |
| Date:    | Friday, 19 November 2021 7:17:27 pm |

### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Submitting against the mass wave of carbon forestry. The amount of money that can me made through carbon farming is causing massive affforestation of hill country farms. In CHB at least 5 large hill country farms have been bought buy forestry companies. Before the changes to the ETS scheme very seldom did farms in CHB go into trees. This has also happened at a time when farm product prices are at a record level. Afforrstation is happening largely on a whole farm level with the governments right tree right place largely meaningless. Carbon farming is a government influenced market and the price floor and ceiling mechanisms the government has put in have massively improved the profitability of forestry. The land going into trees is often easy to medium land which would make very productive farmland. This doesn't seem to fit with the right trees right place idea. Also at the current carbon prices which are far more profitable than farming the price of carbon will only make a minimal difference to people's emitting behavior. It appears like sheep farming is being sacrificed so we can continue our current lifestyle. This is politically easy as we make a tiny proportion of the population. Areas like tiraumea and pongaroa are now mostly pines now and this has all happened within less than 5 years. This area has a very small population and is off any main routes their concerns are unheard. The governments plan to combat climate change by planting hundreds of thousands of hectares in trees which will largely be in the east coast doesn't place any value on sheep and beefs economic impact or value our culture and lifestyles as sheep farmers. It seems to be accepted that it is ok to plant remote or 2nd tier sheep farms but this has completely eliminated the chance of any young farmers ever buying a farm. This would never be acceptable for first home buyers.

The governments special forestry exemption for foreign land purchases seems wrong. It seems to be transferring land and wealth from middles class farmers to very wealthy foreigners. While they are meant to harvest their forest this is years on the future so there is no guarantees that they will. As the rate of afforestation is already greatly exceeding what the government expected then we shouldn't need foreign investment in forestry. It doesn't make sense that it is acceptable for foreign interests to buy massive amounts of land only for forestry but never to keep in farming.

Urgent changes are needed to reduce the rate of afforestation. 7 farms have been listed in hawkes bay/gisborne this week alone and the are now been sold as planting blocks and not farms. There is a perfect storm for this as most farmers are at retirement age and the the cost of farms has taken out the the next generations ability to buy farms. Afforestation is causing rural land to be owned in large blocks by the very wealthy and eliminating the chance of working new Zealanders ever owning land. This doesn't seem to fit in a left wing liberal governments beliefs.



# Meat Industry Association of New Zealand (Incorporated)

# Submission on Proposed Emissions Reduction Plan – Transitioning to a low-emissions and climate-resilient future

# 24 November 2021

### I: Introduction

The Meat Industry Association ('MIA') is the voluntary trade association representing processors, marketers, and exporters of New Zealand red meat, rendered products, and hides and skins. MIA members represent 99 percent of domestic red meat production and export, making the meat industry New Zealand's second largest goods exporter with exports of \$9.5 billion. It is New Zealand's largest manufacturing industry employing some 25,000 people in about 60 processing plants, mainly in the regions.

A list of Association members is attached as Appendix 1.

In developing the submission MIA members were consulted and asked for input. However, individual members will also make their own submissions.

The MIA and its members are committed to meeting the challenge of climate change. As an industry we are committed to becoming 'climate neutral'. The MIA was a founding partner of the *He Waka Eke Noa Primary Sector Climate Change Commitment*. We strongly agree with the formation of an independent Climate Change Commission that can provide transparent, science-based analysis and advice to the Government on the emissions targets and budgets for the future. This is critical for providing long-term stability and certainty for industry, and for ensuring widespread and enduing public support for reductions in emissions.

Meat processors are one of the first industries being required from coal (and potentially natural gas) to electricity and biomass for industrial heating. Meat processors agree with the change and recognise that we have to "play our part" in the transition to a carbon-zero economy. However, this is going to be extremely costly for meat processors, as we are being required to transition from coal well before other fossil fuel using industries are expected to do so. For that reason, early-moving industries such as meat processing should be supported.

The MIA supports the consultation for a clear Emissions Reduction Plan to be published in May 2022. However, to ensure buy-in and understanding from industry and the public, it is important that the Government support any plan with the release of scientific and economic analysis to support the plan, and the data for the different emission possible pathways (and the trade offs made between them) and how they achieve New Zealand's emissions budgets for the next 5 years and the 10 years after that.

The Emissions Reduction Plan (in s.5ZG of the CCRA) is intended to set out the policies and strategies for meeting the relevant emissions budget; and may include in the plan policies and strategies for meeting any emissions budgets for the 2 emissions budget periods after that. The plan must include—

(a) sector-specific policies to reduce emissions and increase removals; and(b) a multi-sector strategy to meet emissions budgets and improve the ability of those sectors to adapt to the effects of climate change; and

(c) a strategy to mitigate the impacts that reducing emissions and increasing removals will have on employees and employers, regions, iwi and Māori, and wider communities, including the funding for any mitigation action; and

(d) any other policies or strategies that the Minister considers necessary.

The ERP should be quite a focussed and practical document for how the Government intends to achieve the emission budgets for the next five years and "may include" additional plans or policies for the next 10 years after that. However, MIA notes that these requirements which are quite specific are not met in the explanations or introduction in the document.

The MIA believe that there are six specific policies that the ERP should adopt:

- 1. Commission a national strategy for biomass, including the future locations and harvest times of biomass and transport links for that biomass to regions where biomass will be required to replace fossil fuels, and facilitate the creation of a reliable biomass market.
- 2. Continue to support and expand the Government Investment in Decarbonising Industry (GIDI) fund. The GIDI has been a very cost-effective tool at bringing about real reductions in CO2 emissions.
- 3. Set out a clear and realistic timetable for the winding down of fossil fuels for all industries. MIA notes that giving a clear signal to industry that coal will not be able to be used past a certain date has spurred meat processing into making significant investments into decarbonising process heat. This should be aligned with our international partners for example, the decision by the UK to ban ICE vehicles from 2030.
- 4. Introduce abatement for forestry credits in the ETS. MIA strongly supports the focus in the ERP on gross emission reductions, especially from fossil fuels. MIA strongly recommends that the Government immediately undertake policy work and economic analysis of the four options for managing forestry in the ETS outlined in passing in the ERP, and engage with industry on those. Given the potential impact on the sheep and beef sector and New Zealand's regional society, landscape and economy, this should be highlighted as an urgent action in the ERP.
- 5. MIA believe that the split-gas approach in the CCRA should be followed in the ERP, and methane (and other short-lived gases) not bundled up with long-lived gases. If the ERP is to bundle up gases into a single CO2e measurement, then more accurate measurement tools should be used such as GWP\* rather than GWP100 (which the IPCC AR6 notes considerably exaggerates the temperature effect of constant methane emissions).
- 6. Support the He Waka Eke Noa Primary Industries Climate Change Commitment, and accelerated research and development into agricultural methane and nitrous oxide emissions, and creating a regulatory environment that allows for the rapid uptake of new technologies.

### II: Meeting the net-zero challenge

# Question 1: Do you agree that the emission reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not.

Under section 5ZG of the CCRA, the ERP should be a document focussed on how the emission budgets for the next five years (and then next two periods) should be achieved. The document states that the Government has proposed budget of 73.0 MtCO2e over the next five year budget period, with a reduction of 7.7MtCO2e needing to be achieved to meet that. The ERP should be focussed on the plan to achieve that 7.7 MtCO2e reduction.

The five principles are very worthy objectives for New Zealand. However, the five principles proposed are high level, and some are not actually directly connected to climate change (i.e. "supporting biodiversity", "strengthening the partnership approach and actively supporting iwi/Maori", etc) making it difficult to assess how the plan is effective or not.

The MIA support the principle that "an evidence-based approach" is used. This must be based on the latest credible internationally-accepted science. We are pleased that specific mention is made of the Intergovernmental Panel on Climate Change (IPCC) is made, as this sets the basic benchmark for ensuring international credibility of New Zealand climate change policy.

# Question 2: How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

Businesses will decarbonise where there is an economic incentive to do so. The ETS with a clear cap on emissions is the logical instrument for doing this, as it allows businesses to make economically rational decisions on carbon emissions. A problem, however, is that instead of decarbonising, the ETS allows for the temporary offsetting of emissions by planting pine forest as a permanent carbon sink. This means that businesses have little incentive to decarbonise when they can simply offset. This in turn that the real price for carbon emissions in meeting the emissions cap is not reflected in the NZU price.

If the Government wishes to accelerate decarbonisation faster than what the ETS price, then it should provide support for businesses to do so within the context of a clear regulatory regime. The MIA strongly support the combination of a clear signal for the removal of coal for industrial heating, and financial support (through EECA) for those businesses that have to make that transition. Meat processors are required to transition from fossil fuels ahead of tother industries – it is a fundamental issue of fairness that industries being required to incur the costs and risks of making the transition ahead of others receive support from Government.

As processors move from coal and other fossil fuels for industrial heat, they will require more electricity and biomass. However, there is not a clear picture for industry for how the Government will increase electricity generation and upgrade the electricity network in the regions to allow for this, and a clear picture for how biomass will be available for industry. Gaining some certainty for the supply of biomass in the future is important for creating a reliable biomass market and accelerating movement form fossil fuels.

# Question 6: which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

An improved electricity network supports electrification and the transition away from fossil fuels and resilience from a changeable climate.
### Question 7: Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

The reliance on large scale carbon storage in forest has already been shown in large forest fires globally. It is a perverse outcome of climate change that global warming will make carbon storage in forestry riskier. Carbon sequestration should be in a closely managed landscape of farmland and plantation forestry rather than as wholesale forests for carbon storage.

# Question 13: Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?

The Climate Change Commission recommended that the Government develop an Equitable Transitions Strategy which should include six objectives. However, the objectives are extremely wide-ranging and high level, affecting almost every aspect of society, so the resulting document is likely to be highly politicised.

An Equitable Transitions Strategy should not distract from the fundamental purpose of the ERP – to provide New Zealand with a clear plan for the next five years for how Government will achieve the 73.0MtCO2e emission target.

However, if the Government intends to pursue a wide-ranging Emissions Transition Strategy, then the objectives to the strategy, in addition to the six, should include:

- Ensuring a resilient, productive and biodiverse landscape;
- Facilitating innovation and productivity.

#### 15. What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?

The groups stated are effectively all of New Zealand society. Such wide-ranging and profound discussion of how New Zealand transitions to a low emission economy and society should be dealt with through the decision-making processes and accountabilities of our parliamentary democracy.

## 16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

Many households are not in the main cities but in the regions, and that policy should recognise that solutions in the major cities (such as mass transit systems) are not applicable for regional New Zealand. The nature of work and housing for many New Zealanders does not reflect many of an essentially urban professional framework the Climate Change Commission and Government apply to household emissions. Support for households to reduce their emission footprint should recognise that many New Zealanders live and work in the regions or rural areas.

## 17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

Workers without basic skills in literacy, maths, and science are relatively at a greater threat if they have to find work in different industries. Many of the workers entering the meat industry are illiterate and/or innumerate, but they acquire a high level of skills in meat processing which are not easily transferable to other industries. A focus of Government should be on

ensuring school leavers have core competency in financial planning and decision-making, literacy, maths and science.

The threat is greatest in regional towns which are heavily reliant on a single employer, and where the workers have skills that are highly specialised to that industry. Any economic analysis on climate change policy needs to factor in how unemployment in regional towns is much more likely to result in long-term unemployment rather than transition into new jobs.

### 19. How could the uptake of low-emissions business models and production methods be best encouraged?

The GIDI has been extremely successful at accelerating the decarbonisation of the meat processing industry. More than 1.5 million tons of CO2 will be removed from the industry through the support of the GIDI. While companies bear the main costs, the contribution of \$19 million to meat processors from the GIDI has enabled the actions to be taken much earlier. This works out at \$12.68 per ton of CO2, well below the cost of the ETS price.

New Zealand already has low-emissions business models for its meat and dairy industries. This has arisen because of a long-term focus on greater productivity from the land, creating more meat from less land and fewer livestock. The result is that New Zealand's meat industry processes as much meat as it did 30 years ago, but with 30% fewer emissions. When one takes into account that much of the reduction has been in methane, in which lower methane emissions have an atmospheric cooling effect, the impact has been actually greater in terms of the warming impact of the sheep and beef sector.

MIA also notes that because we operate in a global market and that emissions are a global issue, maintaining production from relatively low emissions industries avoids carbon leakage. Simply reducing emissions if it results in reduced production from internationally focussed emissions efficient industries, will perversely result in higher global emissions.

Emissions policy, therefore, should recognise and promote emissions efficiency and encourage greater productivity from reduced inputs.

#### III: Aligning systems and tools

## 21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

All Ministries and Government agencies should report annually on their total emissions and gross reductions for the preceding year (and not net reductions by the temporary expedient of planting pine). This could include indirect emissions, such as how workers travel to work. Government agencies should also be benchmarked for their FTEs/emissions.

#### 24. What are the main barriers or gaps that affect the flow of private capital into lowemissions investment in Aotearoa?

The current financial incentives for business to deal with climate change lie with planting pine as offsets instead of driving low-emissions investments.

## 26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

The ETS has had very little impact in driving investment decisions. This has been due to the high supply of carbon credits, the ease of being able to offset by purchasing forestry credits, which has kept the NZU price at such a low level as to be easily disregarded. Fixing the ETS, and especially the ability to crate cheap exotic forestry credits, should be a priority in any plan.

MIA points to the GIDI as a successful example of how Government support can accelerate private investment in decarbonisation.

### 28. Do you have sufficient information on future emissions price paths to inform your investment decisions?

Lack of certainty of the ETS price hinders businesses' decision-making.

Much of the price for carbon in the ETS is driven by the supply of forestry credits (rather than the demand for carbon credits. The relatively low NZU price in the past has meant almost no incentive for businesses to reduce actual emissions.

#### 29. What emissions price are you factoring into your investment decisions?

This varies a great deal across industry because of the extreme uncertainty of the future ETS price. Factors include policies regarding forestry units in the ETS and the Government priming the economy because of Covid.

### 30. Do you agree the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

The MIA agrees with the analysis of the Climate Change Commission that "under current policy settings a rising ETS price is likely to mostly drive exotic forest planting n the short-term rather than gross emissions." We are very pleased that Mfe understands that "this is a one-off benefit, and means the land must remain in forestry permanently. This reduces the flexibility of land use and delays reducing gross emission." (p.38)

The reality is that NZU prices in excess of \$150 are needed to drive significant change away from fossil fuels, but at that price it is much cheaper to buy sheep and beef pasture and plant it in pine for permanent carbon storage. This is not new – the Productivity Commissioner has pointed this out and it was the subject of a major report by the Parliamentary Commissioner for the Environment, *Farms, forests and fossil fuels: The next great landscape transformation*, in 2019.

We agree with the commentary provided by the Mfe in its consultation document (pp.37-38). However, the conclusion is that "We intend to look at this issue more closely, and if needed will change the way forestry is treated under the ETS." It is good that Mfe is "looking at this", but MIA had hoped for more concrete proposals in the ERP given that the ability to offset under the ETS is perhaps the most important single factor in achieving (or not) the Governments goals.

### 31. What are your views on the options presented above to constrain forestry inside the NZ ETS?

MIA strongly supports the ability to constrain forestry in the ETS. The Climate Change Commission has presented several options:

- Reducing demand by limiting how many forestry units non-forestry participants can surrender;
- Requiring them to pay an additional fee when surrendering forestry units;

- Reducing the rate at which units can be earned by forest;
- Limiting the overall area of forest that can be registered in the NZETS each year, or otherwise amending the eligibility criteria.

The first and fourth options can be linked to the Climate Change Commission's budget for gross emissions and its targets for exotic and native forest (i.e. by a certain date, only a certain percentage of NZUs paid to meet obligations can be from forestry NZUs) and provides transparency to the market. The fourth option (limiting forestry area) will require some kind of tendering or other method to allocate what amount to rights to claim forestry credits.

MIA strongly recommends that the Government immediately undertake policy work and economic analysis of the four options, and engage with industry on those. Given the potential impact on the sheep and beef sector and New Zealand's regional society, landscape and economy, this should be highlighted as an urgent action in the ERP.

#### 32. Are there any other views you wish to share in relation to emissions pricing?

The purpose of free allocation is to prevent carbon leakage. The principle of that is sound – if NZ companies have to pay an ETS price overseas competitors do not, and so reduce production/exports then those overseas competitors will increase production and so increase global emissions. The document states that "We consider that current industrial allocation policy is contributing to over-allocation", but no evidence has been put forwards to support that claim.

#### 34. What more do we need to do to promote urban intensification, support lowemissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

This section reflects the generally urban professional focus of the document. Most New Zealanders work and live in regions, and businesses such as meat processors are serviced mostly by workers in their own vehicles. Issues such as urban intensification, public transport, and walkable neighbourhoods are best dealt with by local governments in the main cities who understand those communities best.

### 36. What are the big challenges, particularly around technology, that a mission-based approach could help solve?

37. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?

38. What opportunities are there in areas where Aotearoa has a unique global advantage in low-emissions abatement?

40. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?

41. Are there any other views you wish to share in relation to research, science and innovation?

The focus of this section has been on how the Government funds or incentivises funding of more research and development. Equally as important is the Government removing barriers to uptake. New Zealand could develop a significant advantage in low emission food production. However, it faces potential constraints because Government regulatory systems are not fit for purpose. An example has been on research and development on GM ryegrass and other feeds, which has been delayed and had to be undertaken overseas, and significantly delayed adoption of new technologies that could reduce emissions. A

Meat Industry Association of New Zealand - Submission on Transitioning to a low-emissions and climate-resilient future

"precautionary approach" to scientific R&D and its uptake will mean that new technologies are not adopted as quickly.

Another example of Government regulatory systems that are not fit for purpose and act as barriers is the Animal Compounds and Veterinary Medicines Act, which has acted as a barrier to the uptake of pasture-based emissions reductions technologies (or worse, enabled sellers of products claiming spurious or highly exaggerated environmental claims to sell product). While MPI is looking to amend the ACVM, this has occurred with glacial speed. The Government needs to look at removing many of the barriers to R&D and adoption of new technologies within its own regulatory systems.

New Zealand is undertaking important research into methane and nitrous oxide inhibitors, vaccines and genetics. This is an area where New Zealand has a strong incentive to take a global leadership role. However, there are technologies being developed overseas as well and may be ahead of New Zealand R&D, and sometimes the industry is unaware of scientific developments overseas. The Government should give greater consideration to inviting in overseas scientists and new technology developers on agricultural emission reduction technologies to allow for their faster uptake.

At least as important as new the R&D spent on new technologies is its rapid uptake. An example is low methane genetics sheep. A focus of Government and the *He Waka Eke Noa* Primary Sector Climate Action Partnership is how to dramatically increase the uptake of new technologies amongst farmers.

### 42. What information, tools or forums would encourage you to take greater action on climate change?

The MIA is one of the founding partners of *He Waka Eke Noa* Primary Sector Climate Action Partnership. Industry-Government partnerships provide coherence and industry buy-in to important behaviour change. Through the HWEN, meat processors have been able to support the roll out of GHG Calculation tools to farmers.

## 43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

Independent economic and scientific analysis to provide credibility and independence.

Tools need to be practical and linked to business actions. A problem with the current rollout of GHG calculation tools amongst farmers is that there is little point in a farmer "knowing their emissions" if there is very little the farmer can actually do to reduce their emissions or to reduce their potential liabilities. For that reason, MIA believes that the rollout of messaging and information to business needs to be linked to practical actions for those businesses.

#### 45-51. Circular economy

Questions 45-51 relate to the creation of a "circular economy", which has the ambitious goal of "building up a new economic system that operate within planetary boundaries and achieves wellbeing for all." The ambitions described in the document are aspirational but vague. This is an extremely broad issue, and beyond the scope of a plan to meet a 5-year and 15-year emissions budget.

The New Zealand economy is dependent on the export of agricultural products, and has the goal of a free and open global economy. New Zealand cannot afford a set of policies which may undermine our drive for the elimination of tariffs and non-tariff barriers to trade, and

avoid anything which is seen as protectionist. Missing from the document is that a "circular economy" must be done at a global level, and encourage open trade in low emission products, and avoid protectionism of emissions inefficient industries.

### IV: Transitioning key sectors – Energy and industry questions 58-69

As a general comment, this section is very high level, and does not have the level of detail for specific sectors and industries for emissions and electricity generation over the next 5 and 15 years. A more detailed and focussed plan would be useful for industry.

Providing business with clear pathways and dates for when specific fossil fuels will eventually banned is important for allowing businesses to plan future investment. The ban on all coal use in industrial heat is supported by the meat processing industry, which is already moving to replace many of its coal-fired boilers. MIA notes that giving a clear signal to industry that coal will not be able to be used past a certain date has spurred meat processing into making significant investments into decarbonising process heat. By setting clear target dates has allowed the meat processing industry to also tie the investment in new technologies into a broader story about the environmental sustainability of the New Zealand meat industry and the "NZ meat story" to overseas customers.

However, there is a fundamental matter of fairness in how expecting some sectors to bear the cost of moving from fossil fuel (especially coal) while other sectors avoid the same. Further, the cessation of fossil fuel use in the meat processing industry by regulation means that demand for carbon credits is reduced, so effectively acting to subsidise other carbon emitters through a lower ETS price. If meat processors are being demanded to cease coal and gas use, then that should apply to all sectors.

Key to allowing the change from coal (and later gas) to renewable process heating is the Government Investment in Decarbonising Industry (GIDI) fund. The Government should be commended for this scheme. This has been used extensively by the meat processing industry to support a large-scale conversion to renewables. Spending on direct emission removals is very efficient compared to the ETS - the Government is spending on average \$12.68 per ton of CO2 removed from meat processing through the GIDI. The GIDI is an example of a very successful and practical Government programme and has accelerated decarbonisation of the economy that could not have happened as quickly through simply the ETS. The GIDI should be extended to small and large users, and if possible with easier criteria for small users.

Establishing clear targets should be aligned with our international partners – for example, the decision by the UK and EU to ban ICE vehicles from 2030.

#### V: Transitioning key sectors – Agriculture questions 83-88

The document states that "Emissions from agriculture make up 48 per cent of our gross greenhouse gas emissions. Biogenic methane is a short-lived greenhouse gas...that makes up almost three-quarters of agriculture emissions."

It is puzzling why the consultation document lumps in biogenic methane with long-lived gases, when the CCRA takes a more scientifically credible split-gas approach with different targets and reduction trajectories for biogenic methane and long-lived gases. A split-gas approach is increasingly recognised as the most scientifically credible approach to climate change policy.

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MIA notes that the IPCC AR6 report (2021) points out that if a combined CO2e approach is used then "expressing methane emissions as CO2 equivalent emissions using GWP 100 overstates the effect of constant methane emissions on global surface temperature by a factor of 3-4 over a 20-year time horizon." (IPCC AR6 WG1 7-123). MIA contends that devising policy using a measurement that overstates the effect of stable methane emissions (as is the case for New Zealand agriculture) by a factor of 3-4 is bad policy development.

If a split gas approach of keeping biogenic methane and long-lived gases is not employed in the ERP, and the decision is made to combine all gases as a CO2e, then more accurate measurements such as GWP\* identified by the IPCC, should be used.

MIA believe that the split-gas approach in the CCRA should be followed in the ERP, and methane (and other short-lived gases) not bundled up with long-lived gases. If the ERP is to bundle up gases into a single CO2e measurement, then more accurate measurement tools should be used such as GWP\*.

### 83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?

Using existing structures, such as processors providing support for suppliers, and farmer organisations, is important for avoiding duplication and preventing farmers from feeling they are being overwhelmed by the numerous other environmental and commercial planning and auditing requirements they are already dealing with.

However, MIA notes that despite intensive promotion and information campaigns from industry bodies and processors to their farmer-suppliers, it is not possible to ensure a 100% uptake of emissions reporting (or other behaviours) without it being a regulatory requirement from the Government.

## 84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

There are four areas the Government can help encourage uptake of on-farm mitigations:

- Increased support for the QEII Trust, to encourage sequestration.
- Support for farmers to "know your number" in the roll out of GHG calculation tools.
- A system for the recognition of very new technologies and recording their use, such as low-methane genetics in the sheep herd, or 3NOP in some intensive farming systems, so early adoption can be recognised and supported once a pricing system is introduced. Such a system could be tied into the existing National Animal Identification and Traceability (NAIT), so whether livestock is "low emissions" genetics or had particular treatment such as a methane vaccine is recorded.
- Ensuring that the regulatory system (in particular the ACVM and HSNO) is more responsive and flexible enough to allow for the import or introduction of new technologies quickly and without the current bureaucratic process that prevents many new technologies, that ensure that gives farmers assurance that the technologies are credible, and to avoid "snakeoil salesmen" selling fake products with very dubious claims.

### 85. What research and development on mitigations should Government and the sector be supporting?

- Genetics research into low emissions livestock;
- Methane and nitrous oxide vaccines research;

• Low methane and nitrous oxide genetics research.

This research has been underway for two decades. But there are many barriers to research, especially for GM technologies which may provide the quickest and most reliable pathway for any breakthroughs. The urgency of the situation means that it needs to be expanded considerably. This will also allow R&D providers to do more "blue sky" research.

A significant proportion of any revenues raised from an on-farm emissions levy from 2025 (being developed under *He Waka Eke Noa*) should be dedicated to research and development. Systems should be put in place now to prepare for an expansion of R&D funding from 2025.

Research and development is only a part of the issue. The other is the regulatory framework governing new technologies – something that government can take immediate steps to remedy. We strongly recommend that the ERP include a section on how the Government will amend the current regulatory system, in particular that governed by HSNO and ACVM, to allow for both the easy research, development and roll-out of new methane and nitrous oxide inhibiting technologies, while also providing farmers with an assurance that the product does what it claims to do, and the New Zealand public, overseas regulators and customers that the inhibitors do not create residues in meat or milk product that could be harmful to humans and place exports at risk.

In 2019 there were advertising claims made by a company that the properties of their feed supplement product reduced methane production. MIA urged MPI to alter the regulatory regime under the ACVM to ensure that such claims for feed supplements and inhibitors had to be scientifically credible. The regulation of inhibitors needs to ensure that the products are doing what they claim. If the product makes particular claims of, for example, methane reduction in livestock, those should be scientifically verifiable.

Farmers, to meet their imminent greenhouse gas reporting obligations, will need to be able to prove that use of particular inhibitor or use of a particular genetics line in their breeding programme will achieve certain methane reductions.

In addition, it is important that New Zealand learns from the experience and does not have a repeat of the event which occurred with DCD in 2013, where trace residues were discovered in milk. Similarly, the use of Hormone Growth Promotants (HGPs) in livestock, which allowed some farmers to use HGPs despite it being a serious threat to exports. There needs to be a regulatory regime to ensure that any residues in milk or meat is safe for human consumption and done in a way which is internationally acceptable. This is critical for the continued export of NZ agricultural products.

It is the view of MIA that for farmers to have confidence to adopt products with proven efficacy, and supply chain participants to have the confidence to accept their use, regulated product stewardship is required for the suppliers and marketers of the products. The ERP should task MPI and the EPA with ensuring that the regulatory environment is fit for purpose as a priority.

# 86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Some government departments have made claims about agricultural products (milk/meat) to date has not been useful or have been misleading and required a response from industry – for example, Ministry of Health advice on diets recommending less red meat that ignores the nutritional value of the products (comparing foods based on basic weight rather than the unique nutritional value, and that ignores the misleading impact of biogenic methane in

footprints). For that reason, MIA is very cautious about the Government becoming involved in this space.

The meat export industry is already subject to intensive regimes for food safety and other aspects required by overseas countries as a market access requirement. If other countries establish climate change requirements on product, then we expect the Government to ensure that any such market access requirements are credible and science-based and not used for domestic protection by overseas regulators.

#### 87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

New Zealand farmers are already generally highly efficient and respond to market signals. Farmers make decisions based on the relative profitability of their land. The move to dairying in recent years shows that farmers are generally economically rational.

The problem is that the ETS sends a false signal. At the current ETS price, landowners have a strong incentive to stop farming and to plant the land in pine, gain the NZUs from a steadily increasing ETS price, and walk off the land.

#### VI: Transitioning key sectors – Forestry questions 106-114

## 106. Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

No. That is a form of cross-subsidisation, allowing fossil fuel users to avoid paying the full cost of their emissions by being allowed to store carbon on farmland.

## 107. What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?

Closure of meat processors in rural communities will be disastrous and likely spell the end of those communities as economically viable places where the meat processor was the largest employer. Meat processor workers often begin work with low skills base, and the skills they gain in meat processing are to a great extent specialised in meat processing – transitioning to a new industry will be extremely difficult. Further, forestry work is undertaken by forestry gangs from other areas who come in for specific purposes in that forest (such as logging) before moving on, whereas meat processing is permanent or semi-seasonal annual work from a very settled workforce. What "employment transitions" will likely be some of the existing workforce becoming dependent on the Government in various ways or leaving that community to seek other employment opportunities.

## 108. What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

Under the ETS, planting native trees is completely uneconomic. The establishment costs of planting natives (generally \$12-14,000 native planting vs \$2,500 per hectare in pines), and the different sequestration factors (6.5 tons CO2 per year with natives versus 26-tons CO2 per year with pine), mean that planting natives will be done for non-economic reasons.

Meat Industry Association of New Zealand - Submission on Transitioning to a low-emissions and climate-resilient future

Reducing the economic incentive under the ETS to plant pine for carbon storage will make a significant difference.

Significantly greater support for the QEII Trust would be a practical way to establish and maintain native forest on private land.

# 109. What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

Planting on unproductive land appropriate to that farm. Many cases it is possible to plant significant areas of farms while ensuring their livestock production is maintained. Current situation incentivises mass planting and wholesale landscape change.

# 111. What role do you think should be played by central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment?

As above – abating the exotic forestry credits in the ETS is an important first step, but requires considerable policy analysis.

### 112. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

Landowners who have planted forest in order to gain credits under the ETS do so because they accept the costs of managing that land in compliance with their ETS obligations. The Government should not be providing subsidies for ETS forest.

Non-ETS forest should be supported. There are already many existing bodies that the Government can provide greater support to for pest management, such as OSPRI.

#### VII: Summary

The MIA believe that there are six specific policies that the ERP should adopt:

- 1. Commission a national strategy for biomass, including the future locations and harvest times of biomass and transport links for that biomass to regions where biomass will be required to replace fossil fuels, and facilitate the creation of a reliable biomass market.
- 2. Continue to support and expand the Government Investment in Decarbonising Industry (GIDI) fund. The GIDI has been a very cost-effective tool at bringing about real reductions in CO2 emissions.
- 3. Set out a clear and realistic timetable for the winding down of fossil fuels for all industries. MIA notes that giving a clear signal to industry that coal will not be able to be used past a certain date has spurred meat processing into making significant investments into decarbonising process heat. This should be aligned with our international partners for example, the decision by the UK to ban ICE vehicles from 2030.
- 4. Introduce abatement for forestry credits in the ETS. MIA strongly supports the focus in the ERP on gross emission reductions, especially from fossil fuels. MIA strongly recommends that the Government immediately undertake policy work and economic analysis of the four options for managing forestry in the ETS outlined in passing in the ERP, and engage with industry on those. Given the potential impact on the

sheep and beef sector and New Zealand's regional society, landscape and economy, this should be highlighted as an urgent action in the ERP.

- 5. MIA believe that the split-gas approach in the CCRA should be followed in the ERP, and methane (and other short-lived gases) not bundled up with long-lived gases. If the ERP is to bundle up gases into a single CO2e measurement, then more accurate measurement tools should be used such as GWP\* rather than GWP100 (which the IPCC AR6 notes considerably exaggerates the temperature effect of constant methane emissions).
- Support the He Waka Eke Noa Primary Industries Climate Change Commitment, and accelerated research and development into agricultural methane and nitrous oxide emissions, and creating a regulatory environment that allows for the rapid uptake of new technologies.

#### VIII: MIA Contact

Meat Industry Association of New Zealand (Inc)

24 November 2021

### Appendix 1: MIA members and affiliate members as at June 2020

| Members                               | Affiliate members                    |
|---------------------------------------|--------------------------------------|
| Advance Marketing Ltd                 | Abattoirs Association of New Zealand |
| AFFCO New Zealand Ltd                 | AgResearch Ltd                       |
| Alliance Group Ltd                    | Alfa Laval New Zealand Ltd           |
| Ample Group Ltd                       | AON New Zealand Ltd                  |
| ANZCO Foods Ltd                       | Auspac Ingredients Pty Ltd           |
| Arrow Commodities (NZ) Ltd            | Centreport Ltd                       |
| Auckland Meat Processors Ltd          | CMA-CGM Group Agencies (NZ) Ltd      |
| Bakels Edible Oils (NZ) Ltd           | Cooltranz 2014 Ltd                   |
| Ballande New Zealand Ltd              | Conveyor Industries Ltd              |
| Blue Sky Meats (NZ) Ltd               | Direct Fats and Oils Ltd             |
| BX Foods Ltd                          | Foodcap International Ltd            |
| Columbia Exports Ltd                  | G-Tech New Zealand Ltd               |
| Crusader Meats New Zealand Ltd        | Haarslev Industries Ltd              |
| Davmet (New Zealand) Ltd              | Hamburg-Sud New Zealand Ltd          |
| Farmlands Mathias International Ltd   | Hapag-Lloyd                          |
| Fern Ridge Ltd                        | Ibex Industries Limited              |
| Firstlight Foods Ltd                  | Intralox Ltd                         |
| GrainCorp Commodity Management NZ Ltd | Jasol                                |
| Greenlea Premier Meats Ltd            | Kemin Industries NZ Ltd              |
| Harrier Exports Ltd                   | Liqueo (HB) Ltd                      |
| Integrated Foods Limited              | Maersk NZ Ltd                        |
| Kintyre Meats Ltd                     | MJI Universal Pte Ltd                |
| Lowe Corporation Ltd                  | Oceanic Navigation Ltd               |
| Midland International Ltd             | Port of Napier Ltd                   |
| NZ Natural Beef and Lamb Ltd          | Port Otago Ltd                       |
| Ovation New Zealand Ltd               | PrimeXConnect                        |
| Peak Commodities Ltd                  | Pyramid Trucking Ltd                 |
| Prime Range Meats Ltd                 | Rendertech Ltd                       |
| Progressive Meats Ltd                 | Rockwell Automation (NZ) Ltd         |
| Provenance Meat (NZ) Ltd              | SCL Products Ltd                     |
| PVL Proteins Ltd                      | Scott Technology Ltd                 |
| SBT Group Ltd                         | Sealed Air (New Zealand)             |
| Silver Fern Farms Ltd                 | SHICO Limited                        |
| Standard Commodities NZ Ltd           | Vero Insurance New Zealand Ltd       |
| Taylor Preston Ltd                    | Visy Industries Australia Pty Ltd    |
| Te Kuiti Meat Processors Ltd          | Wiley New Zealand Limited            |
| UBP Ltd                               |                                      |
| Value Proteins Ltd                    |                                      |
| Wallace Group                         |                                      |
| Wilbur Ellis (NZ) Ltd                 |                                      |
| Wilmar Gavilon P ty Ltd               |                                      |

From:Megan FrielTo:climate consultation 2021Subject:Limiting offsetting carbon on farmland forestationDate:Friday, 19 November 2021 9:30:24 pm

#### **MFE CYBER SECURITY WARNING**

## This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Good evening – you have apparently sought feedback on whether the carbon offsets available through the planting of farmland should be limited.

The purchasing and planting of beef and lamb nurseries is a disaster and one which you have been advised of repeatedly. We personally know of at least 10 properties which have gone under pines in the last month. Another has barely escaped this fate after a farming family were obliged to pay over \$20,000 per hectare to outbid a foreign based carbon farmer – hardly sustainable and only a very few farming families would be capable of paying this much for pastoral grazing land.

A real estate agent from Hawkes Bay with whom we viewed a smaller property, stated that he had had billionaires in his side by side looking at every piece of sizeable farmland on the market to plant in pine trees. Motonui Station in the Central Hawkes Bay (a gently contoured multi generational cropping, breeding, finishing property) was more than likely to go into pine trees as no one else would have the resources to outbid the said Billionaire carbon speculators. The Government and the Ministry for the Environment have effectively been asleep at the wheel as the rural community has been endeavouring to catch your attention about this disaster for New Zealand as we know it unfolding. Our local Farmlands store has advised that they had thousands and thousands less doses of pre lambing vaccines ordered this year. If that does not tell you that the entire supply and service chain within the agriculture sector is about to have an enormous shock then I do not know what else will. The ramifications of your inaction and arrogant denial that there is a problem will be remembered for generations.

The 50 Shades of Green march on Parliament on 14th November 2019 was greeted by Damien O'Connor patronisingly stating that he "was listening" – since then 10's of thousands more hectares have been closed up, destocked and sprayed for carbon and production forest planting, and Shane Jones referred to distressed and concerned farmers as "Ngati Red Necks" and NOTHING happened except for apparently OIO parameters to be further loosened so even more farmland could be lost for ever to land and water poisoning mostly foreign owned pine trees.

The average New Zealander is completely ignorant of the treason that this Government is committing but they are waking up and the realisation that once the gates are shut, the stock are gone and the land is planted it is lost completely to future generations is going to come to them with a thump when our export earnings plummet and the standard of living which the majority of New Zealanders take for granted reduced considerably. Some of us can remember the rural towns of New Zealand being reduced to wasteland ghost towns after the last great plant encouraged by a previous Labour Government in the 80's – this great plant makes that one look like child's play.

Accordingly it is my recommendation that a complete cessation to OIO approvals to all carbon and production forests happens immediately and in cases where the land is yet to be planted, decisions are reversed under urgency.

Yours sincerely,

Megan Friel





Via email: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

#### 24 November 2021

### Transitioning to a low-emissions and climate-resilient future: Emissions Reduction Plan discussion document

Mercury welcomes the opportunity to provide feedback on the initial proposals and further measures that could form the basis of the government's final emissions reduction plan in May 2022. Mercury supports a transition to a low carbon economy which delivers emissions reduction, access to reliable and affordable energy and a fair, equitable and inclusive future for all New Zealanders. We are pleased the document seeks feedback into the analysis and proposals put forward by the Climate Change Commission (CCC) in relation to the energy sector which we supported.

#### New Zealand's electricity sector stands ready to support decarbonisation

Mercury welcomes the recognition that New Zealand's already highly renewable electricity system will play a vital role in delivering emissions reductions across the economy. New Zealand is consistently ranked within the top ten countries in the world for balancing the energy trilemma of environmental sustainability, energy equity and energy security.<sup>1</sup>

The CCC identified the great opportunity that New Zealand's low emissions electricity sector can provide, supporting the decarbonisation of higher emission sectors such as process heat and transport through substitution. The electricity sector is responding positively to the challenge of supporting New Zealand emissions reductions targets by 2050. Around \$2bn in new renewable generation investment is underway which takes emissions from electricity in New Zealand to a level consistent with:

- > the required contribution from the electricity sector to achieve the CCC's demonstration path; and
- > the 2030 emissions intensity the Science Based Targets Initiative identifies for the energy sector to limit global warming to a 1.5-degree future.

This investment sees New Zealand's renewable electricity generation increase by around 10% which Mercury estimates will be around 92% by the end of the first emissions reduction plan budget period.

Mercury is supporting decarbonisation through its own investments such as New Zealand's largest wind farm at Turitea near Palmerston North. Mercury's recent acquisition of New Zealand wind development options of Tilt Renewables also represents a pipeline of high-quality investments that can be flexibly brought to market as demand increases driven by the policy measures considered in the consultation paper.

#### Innovation is occurring led by market signals

Historically investment in new generation has been supported through existing sector balance sheets rather than project financing, which has resulted in limited demand for arrangements such as Power Purchase Agreements (PPA). However, the market for PPAs in New Zealand are developing driven by an increasing focus from the business sector in demonstrating tangible emissions reduction activity and support for renewable electricity. Long-term PPA's for new renewable projects is an innovation that is emerging as key mechanism to provide certainty to



<sup>&</sup>lt;sup>1</sup> https://trilemma.worldenergy.org/#!/country-profile?country=New%20Zealand&year=2021

market participants as well as supporting decarbonisation of the electricity sector. Genesis for example have signed a number of PPAs, including with Mercury, as part of their Future-Gen programme to displace emissions from their existing thermal generation fleet<sup>2</sup>.

#### Stable and integrated policy required to support future emissions reduction

Achieving New Zealand emissions reductions targets will require investment a new renewable generation at a substantially faster pace than has been delivered in the past. A new wind farm the size of Mercury's Turitea development will be required every nine months until 2050.

Ensuring energy policy supports the transition to a low carbon economy will be essential to delivering future investment. Mercury is encouraged by the consultation's recognition of the importance of balancing the energy trilemma as well seeking views on the implementation of an integrated National Energy Strategy (NES) and renewable energy target. Mercury has long advocated for establishing a renewable energy target as a better driver for decarbonisation than the current target of 100% renewable electricity and supports this outcome as a priority action.

#### National Energy Strategy should prioritise sector engagement

Mercury supports a NES which is required due to the need to co-ordinate the complex interactions across multiple sectors and decision makers. It will help deliver effective alignment and a multi-partisan approach to key policy mechanisms such as resource planning, local government decision making for renewables investment, and support for long-term market signals through multiple political cycles.

Currently there are many valuable processes initiated by both government and regulators considering specific elements of the energy transition. Examples include the New Zealand Battery Project being led by MBIE on options to address dry year risk and the work of the Electricity Authority's Market Development Advisory Group on how the electricity market may need to evolve to support 100% renewable electricity. Industry is also responding with policy proposals including options to decarbonise the electricity system and the potential for new technologies such as hydrogen storage.

Mercury welcomes and supports these important contributions and considers the main opportunity from a NES is to bring together the wealth of knowledge being generated to evaluate the most optimal pathway for the decarbonisation of the energy system within the New Zealand economy. The risk posed by current fragmentation of processes and decision-making is that single point solutions may be adopted which do not consider the interconnected nature of the entire energy system and inadvertently undermine New Zealand maintaining its balanced trilemma performance into the future.

The value of a NES will be to provide an options based approach for the range of least cost and feasible solutions to address the main challenge of securely transitioning the New Zealand economy to higher proportions of renewable energy which will deliver the required emissions reduction to meet our targets.

This objective could be best supported by establishing a forum that brings together policy makers, regulators and industry experts to more purposefully consider the energy transition challenges and opportunities under the NES process. An Energy Sector Taskforce comprising senior representatives from electricity generation, electricity networks, gas infrastructure as well as the transport and process heat sectors to provide advice would be a valuable step. The open letter provided by leading companies in the energy sector in May 2021 indicated public support for working constructively and collaboratively with government and regulators on frameworks to support rapid decarbonisation and the development of a shared NES.<sup>3</sup> The work of Aotearoa Circle's Low Carbon Energy



<sup>&</sup>lt;sup>2</sup> https://www.genesisenergy.co.nz/about/sustainability/caring-for-our-environment

<sup>&</sup>lt;sup>3</sup> https://issuu.com/mercurynz/docs/industry open letter on decarbonisation?fr=sYzhiMDE4MTY2Nzk

Roadmap to 2050 is also progressing and brings together diverse expertise across private and public energy sector entities and will provide valuable input to the NES process.

Mercury considers one role of the Energy Task Force could be to specifically consider and provide expert advice to government on the options to address a main transition challenges for the economy to higher proportions of renewable energy. This could include how thermal generation assets can be phased-out while still maintaining security of supply and affordability and how electricity sector market arrangements could evolve to maintain investment signals and efficient operation.

#### Resource management frameworks should explicitly recognise and support decarbonisation

The CCC final advice to government recommended that barriers to future renewable generation investment should be explicitly addressed in reforms to the resource management frameworks. Mercury and the wider industry have consistently called for more explicit recognition of climate change in the National Built Environment Act (NBEA), to (among other things), link into the Climate Change Response Act (CCRA) and recognize the contribution increasing renewable energy use can play in decarbonisation.

There are some encouraging pointers in the recent Environmental Select Committee (ESC) Inquiry Report recognising the need to create such linkages and the contribution increasing renewable energy use can play in decarbonization. However, there is limited detail on how this might achieve New Zealand's greenhouse gas reduction targets and budgets. There remains a need to expressly reference the climate system and its biophysical limits and outcomes and afford them priority over competing outcomes. Without this high level prioritisation, consenting and building the renewable electricity generation and transmission projects quickly enough to meet the proposed emission budgets and plans will be challenging.

#### Opportunities to achieve more rapid decarbonisation – the importance of industry collaboration

Mercury welcomes and supports the policy measures outlined in the consultation document to accelerate the decarbonisation of the transport and process heat sectors which are the largest decarbonisation opportunity for New Zealand. Much progress has been made and the government should be acknowledged for listening to and implementing a wide range of measures supported by industry as well as allocating targeted government funding (e.g. Clean Car Discount, Low Emission Transport Fund, GIDI fund and State Sector Decarbonisation Fund).

The development of public-private partnerships provides an opportunity for government to speed up progress towards targets at least cost to the taxpayer. Such opportunities are available to assist an equitable transition and to support the creation of innovative business models.

For example, Mercury has in the past initiated a successful electricity pricing plan pilot with Kainga Ora. In transport, through our partnership with Big Street Bikers, we are supporting the delivery of public secure parking, charging and wayfinding docks (called "Locky Docks") for e-bike users. We also have experience in operating a subscription service aimed at making it easier for New Zealanders to get behind the wheel of an EV by eliminating up-front costs and managing insurance premiums, warrants of fitness, vehicle registration and maintenance. We would welcome the opportunity to trial these types of initiatives in novel settings alongside government agencies, whether it be for use in the community or within government itself.

To enable such partnerships, we encourage the government to think about specific ways it can encourage and participate in innovative low-carbon trials in both transport and other sectors. This may require collaboration across agencies to identify opportunities for innovation, proactively seeking expressions of interest from outside government and a suitably streamlined approach to "procurement" for trials.

Process heat conversion to renewable electricity is more likely to pose challenges in the short term due to the relative economics with biomass and capital investment cycles. Mercury sees opportunities for increased public and private sector collaboration on supporting industrial decarbonisation as renewable generation investment increases. The GIDI fund has played a valuable role in helping to support industry decarbonisation and process heat conversion and Mercury considers further scaling-up of this model could be evaluated to deliver further long-term benefits.



Opportunities also exist to further reduce emissions from the electricity sector. Mercury and other geothermal generators are actively trialling technology to sequester and reinject carbon emissions back into geothermal reservoirs. If successful, this technology would have the potential to significantly reduce the direct emissions from geothermal generation.

Mercury looks forward to engaging constructively with government, industry stakeholders, regulators and consumers on a finalised emissions reduction plan and continuing to support Aotearoa New Zealand to achieve its decarbonisation goals. As the discussion document outlines, we all have a role to play in working together to manage the just transition to a low carbon economy that enables our environment, our communities and organisations to continue to thrive.

Yours sincerely



Head of Government and Industry Relations



### **Appendix A: Mercury response to consultation questions**

| Consultation Question  | Mercury Response   |
|--|--|
| Meeting the Net Zero Challenge –<br>Transition Pathway   |  |
| <ol> <li>Do you agree that the ERP<br/>should be guided by a set<br/>of principles? Are the five<br/>principles set out the<br/>correct ones?</li> </ol>   | Mercury broadly agrees that the Emissions Reduction Plan (ERP) should be<br>guided by a set of principles. We would however like to understand if there<br>is any weighting given to certain principles over the others. In the context of<br>our climate emergency, principles that give rise to stable policy relying on<br>evidence-based solutions that have wider social and environmental benefits<br>should be given priority weighting.  |
|  | Whilst we have no issue with the principles proposed we would like to see<br>the addition of a principle giving weight to the importance of the partnership<br>between government and the private sector. We will refer to this throughout<br>our submission as in our view successful collaboration between the public<br>and private sectors is key to making fast and efficient progress towards our<br>Net Zero 2050 goals. Government should be required to actively promote<br>private sector solutions where there is a clear benefit in doing so.  |
| 2. How can we further enable<br>private sector action to<br>reduce emissions and help<br>achieve a productive,<br>sustainable and inclusive<br>economy? In particular<br>what key barriers could we<br>remove to support<br>decarbonisation. | The ERP must provide clear policy direction that will support continued investment in renewable electricity. Policy should be practical, based on good modelling and be robust enough to provide a pathway even when unexpected changes occur.<br><b>Regulatory Barriers</b><br>The key barrier to private sector investment is regulatory uncertainty. This is in relation to both the environmental consenting process and electricity market settings. We submitted at length on these issues in our submission to the Climate Change Commission (CCC) <sup>4</sup> however to summarise:   |
|  | 1. Environmental legislation<br>To achieve electrification of the economy in the timelines<br>contemplated by the CCC there will need to be strong government<br>policy support. The Environment Select Committee (ESC) has<br>recently completed its Inquiry on the exposure draft of the proposed<br>National and Built Environments Act (NBEA). There are some<br>encouraging pointers in the ESC Inquiry Report recognising the need<br>to create linkages between the NBEA and Climate Change<br>Response Act (CCRA) and the contribution increasing renewable<br>energy use can play in decarbonization. However, there is limited<br>detail on how this might be achieved in order to link NBEA outcomes<br>with the climate change response required to achieve New Zealand's<br>greenhouse gas reduction targets and budgets. In Mercury's view<br>there remains a need to expressly reference the climate system and<br>its biophysical limits and outcomes and afford them priority over<br>competing biophysical limits and outcomes. Without this high level<br>prioritisation, consenting and building the renewable electricity |

<sup>4</sup> <u>https://haveyoursay.climatecommission.govt.nz/comms-and-engagement/future-climate-action-for-aotearoa/consultation/view\_respondent?uuId=470208098</u>



|   | generation and transmission projects quickly enough to meet the<br>proposed emission budgets and plans will be challenging. For a<br>more comprehensive discussion of NBEA issues please see<br>question 33 below.   |
|---|--|
|   | The government should also consider whether the Electricity Industry<br>Act 2010 should include a climate change objective in the statutory<br>objectives of the Electricity Authority.  |
|   | 2. Electricity Market  |
|   | Given the size of the investment challenge in new renewable<br>electricity it is imperative that the investment signals provided<br>through the current market frameworks are maintained to give<br>confidence to capital holders to continue to invest in the electricity<br>sector.  |
|   | a. Mercury supports the CCC's view that meeting Aotearoa<br>New Zealand's 2030 and 2050 emissions reductions targets<br>requires a <b>long-term view</b> of investments and infrastructure<br>developments. Investments being made now in new<br>renewable generation and refurbishing existing renewable<br>generation will have asset lives that extend potentially even<br>beyond 2050. Historical uncertainty around the future of the<br>Tiwai aluminum smelter for example has been a major<br>impediment to renewables investment in the South Island<br>however investor confidence has been temporarily restored<br>by the smelter's power supply agreement with Meridian.  |
|   | b. The New Zealand Battery Project run by MBIE is considering<br>the role of long duration storage options, particularly a large<br>centralised scheme in the South Island at Lake Onslow<br>estimated to cost around \$4 billion. A large scale pumped<br>hydro scheme would be a major intervention into the<br>electricity market creating significant uncertainty and risk<br>during a period where <b>capital attraction</b> to the sector is<br>essential if the country is to meet our decarbonization goals.   |
|   | c. Other regulatory processes are also in train to better<br>understand how the electricity market should evolve to<br>accommodate an increasingly renewable power system. For<br>example, the Electricity Authority is investigating options for<br>price discovery in the wholesale market under a 100%<br>renewable electricity supply. The Electricity Authority is also<br>carrying out work on analyzing competition in the wholesale<br>market, investigating the extent to which contract price<br>discrimination is an issue in the wholesale market and<br>working to better understand opportunities and challenges to<br>the future security and resilience of the power system. We<br>also understand that MBIE's energy markets work<br>programme is examining the transition to a 100% renewable<br>electricity grid. All these workstreams are interrelated yet<br>occurring in parallel. We see a risk of a fragmented<br>approach to future electricity market design creating<br>uncertainty for the sector, which may in turn dampen future<br>investment in renewable generation. |
| <ol> <li>In addition to the actions<br/>already committed to and<br/>the proposed actions in<br/>this document, what further<br/>measures could be used to</li> </ol> | Mercury encourages the government to build partnerships with the private<br>sector in order to achieve quicker and more efficient progress towards<br>targets. This issue is discussed at question 1 above and throughout our<br>submission.   |

|    | help close the gap?  | Further clarity would be useful on the assumptions around the contribution<br>from the electricity sector in the modelling (see response to Q.69) but<br>Mercury considers additional contributions may be possible. As an example -<br>Mercury and other geothermal generators are actively trialling technology to<br>sequester and reinject carbon emissions back into geothermal reservoirs. If<br>successful, this technology would have the potential to significantly reduce<br>the direct emissions from geothermal generation.   |
|----|--|---|
|    |  | Mercury sees opportunities for increased public and private sector<br>collaboration on supporting industrial decarbonisation as renewable<br>generation investment increases. The GIDI fund has played a valuable role<br>in helping to support industry decarbonisation and process heat conversion<br>and Mercury considers further scaling-up of this model could be evaluated to<br>deliver accelerated emissions reduction.  |
| 4. | How can the ERP promote<br>nature-based solutions that<br>are good for both climate<br>and biodiversity?                                     | By including these as policy proposals for assessment and where<br>appropriate providing funding through existing funds or targeted funds. It<br>would be important that any nature-based solutions deliver emission<br>reductions and do not have unintended consequences.   |
| 5. | Are there any views you<br>wish to share in relation to<br>the Transition Pathway?   | The suggested measures represent a very large body of work and so it is vital that the government prioritises activity towards the most significant abatement outcomes over short- and long-term horizons. Development of a road map in collaboration with local government, iwi Maori and the private sector will also be important so everyone has a clear idea about the workstreams will be integrated and sequenced. The National Energy Strategy (NES) should help sequence the transition towards a low carbon economy.  |
|    |  | We also desire more clarity on what is expected of the electricity sector as part of the ERP. For example, we note that the emissions reduction contributions assumed from "energy and industry" for 2022-2025 are likely less ambitious than that of the CCC's demonstration path (1.5 to 3.3 Mt vs. 4.3 Mt, according to our estimates). What are the assumptions for the contributions from the electricity sector specifically? The electricity sector is responding positively to the challenge of supporting New Zealand emissions reductions targets by 2050. Around \$2bn in new renewable generation investment is underway which is consistent with the required contribution from the electricity sector to achieve the CCC's demonstration path and the emissions intensity the Science Based Targets Initiative identifies to limit global warming to a 1.5-degree future. |
| 6. | Which actions to reduce<br>emissions can also best<br>improve our ability to adapt<br>to the effects of climate<br>change?                   | In our view faster action on current measures combined with education and leadership from government will best improve our ability to adapt to the effects of climate change. The consultation notes the areas that are most relevant.  |
| 7. | Which actions to reduce<br>emissions could increase<br>future risks and impacts of<br>climate change and<br>therefore need to be<br>avoided? | The complexity of the energy sector means that one of the greatest<br>challenges facing government is making policy to address the big picture<br>rather than multiple policies to address individual issues as they arise. The<br>development of an NES will help create the overview required as will credible<br>leadership from industry and collaboration with government. Based on<br>actions taken by government to date to reduce emissions we recommend<br>caution around the following:   |
|    |  | <ol> <li>Focus on 100% renewables</li> <li>CCC modeling shows that flexible gas supplies will be required beyond<br/>the 2030 target for the government's 100% renewable electricity goal.<br/>Without an appropriately managed transition for fossil fuels from the</li> </ol>   |

|   | <ul> <li>electricity system Aotearoa New Zealand runs the risk of perversely increasing emissions to ensure security of supply, (as is currently occurring with the increase in coal generation due to the shortage of gas supplies), or raising electricity prices and delaying the transition of the transport and process heat sectors to renewable electricity and alternative fuels. We therefore support that the government's 100% renewable electricity goal is now referred to as "aspirational" and urge decarbonisation efforts to focus on the actions where the greatest emissions reductions can be gained.</li> <li>2. Remaining technologically neutral In principle we support the government focusing on removing barriers to</li> </ul>  |
|---|---|
|   | innovation and uptake of new technology that may play a significant role<br>in reducing emissions rather than the introduction of direct subsidies for<br>technologies. Nobody is in a position to foresee which technologies will<br>prove the most successful and cost effective so allowing for trials and<br>'learning by doing' is a good approach. In the context of the electricity<br>market for example, a significant strength has been the commitment by<br>successive governments to avoid picking technological winners via<br>distortionary interventions like subsidies or bans. <sup>5</sup> This has allowed New<br>Zealand to develop a diverse and complimentary mix of renewable and<br>non-renewable generation technologies responsible for ensuring the<br>country's world leading performance in balancing the energy trilemma.<br>Please also see our comments at question 2b above in relation to Lake<br>Onslow. |
| Treaty partners   |   |
| 12. Reflecting on the CCC<br>recommendations for a<br>mechanism that would<br>build strong Te Tiriti<br>partnerships, what existing<br>models of partnership are<br>you aware of that have<br>resulted in good outcomes<br>for Maori? | Through our own experience we can attest to the benefit of genuine, active<br>and enduring partnership with iwi/Maori. Mercury has long-term commercial<br>partnerships with Tauhara North No. 2 Trust and Tuaropaki Trust in<br>geothermal electricity generation in the central North Island. We also have<br>longstanding relationships with the Waikato River iwi. We also have helped<br>establish and support a range of programmes with iwi/Maori and other<br>regional organisations such as educational initiatives, environmental and<br>ecological restoration projects and a range of Māori cultural support<br>initiatives.  |
| Equitable transition  |   |
| <ol> <li>Do you agree with the<br/>objectives for an Equitable<br/>Transitions Strategy (ETS)<br/>as set out by the CCC?<br/>What additional objectives<br/>should be included.</li> </ol>  | We broadly support the objectives for an Equitable Transition Strategy (ETS) linked to the Government's Economic Plan. We note however that an "equitable" transition seems to only apply to communities, small business and the work force. An ETS should address all groups who are impacted by decarbonisation including industry. For example, no mention is made of managing the risk of stranded assets, such as gas pipeline infrastructure and the impact that will have on larger operators who create significant employment opportunities and other positive spin offs. We would welcome greater specificity.  |
|   | We support the CCC's focus on measures to increase the likelihood of an equitable, inclusive and well-planned climate transition. For example, the transition to a low-carbon transport system should ensure equitable access,  |

<sup>&</sup>lt;sup>5</sup> Refer <u>https://nzinitiative.org.nz/reports-and-media/reports/switched-on-achieving-a-green-affordable-and-reliable-energy-future/</u>

|  | be it micro-mobility, public transport and/or electric vehicles. Equitable access in our eyes should address not just socioeconomic disparities but also the needs of those who are differently abled.  |
|--|---|
| 14. What additional measures<br>are needed to give effect to<br>the objectives noted by the<br>CCC, and any other<br>objectives you think should | As we have mentioned above, the development of public private partnerships<br>provides an opportunity for government to speed up progress towards<br>targets at least cost to the taxpayer. Such opportunities are available to<br>assist an equitable transition and to support the creation of innovative<br>business models.   |
| be included in an ETS?   | For example, Mercury has in the past initiated a successful electricity pricing<br>plan pilot with Kainga Ora. In the transport sphere, we are passionate about<br>exposing Kiwis to the joys of electric transport, whether it be an e-scooter, e-<br>bike, e-bus or EV. Through our partnership with Big Street Bikers, we<br>support the delivery of public secure parking, charging and wayfinding docks<br>(called "Locky Docks") for e-bike users. We also have experience in<br>operating a subscription service aimed at making it easier for New<br>Zealanders to get behind the wheel of an EV by eliminating up-front costs<br>and the need to worry about managing insurance premiums, warrants of<br>fitness, vehicle registration and maintenance. We would welcome the<br>opportunity to trial these types of initiatives in novel settings alongside<br>government agencies, whether it be for use in the community or within<br>government itself. |
|  | To enable such partnerships, we encourage the government to think about<br>specific ways in which it can encourage and participate in innovative low-<br>carbon trials in both transport and other sectors. This may require<br>collaboration across agencies to identify opportunities for innovation,<br>proactively seek expressions of interest from outside government and a<br>suitably streamlined approach to "procurement" for trials.   |
| 16.  | Mercury would strongly support revenue recycling from higher NZ ETS carbon prices to help decarbonisation projects and this could include support for lower socio-economic groups. We are pleased to see this under consideration in the ERP under Funding and Financing and would urge Treasury and the Ministry for the Environment to develop the appropriate mechanisms to enable this.   |
|  | Please also see our response to question 14 above.  |
| 19. How could the uptake of<br>low-emissions business<br>models and production<br>methods be best  | Government should play a leading role in decarbonisation and be focussed<br>on action. The government can demonstrate leadership through education<br>and its own procurement to drive 'Avoid, Shift and Improve' behaviours to<br>accelerate decarbonisation, particularly in the transport sector. In particular:   |
| encourageo ?   | <ul> <li>Government is in a unique position to model the behaviours required<br/>to enable New Zealand's transition to a low carbon economy. In<br/>addition to setting the strategic direction for climate change, it can<br/>help New Zealanders understand why and how we must contribute<br/>as individuals and businesses to lowering our emissions. The<br/>government's handling of the Covid-19 pandemic has shown how<br/>well-orchestrated and consistent communications can modify<br/>behaviours significantly. A similar approach should be adopted to<br/>tackle the decarbonisation transition - encouraging people to change<br/>or adopt new behaviours around reducing/avoiding travel, using<br/>active modes, using public transport and/or EVs.</li> </ul>   |
|  | <ul> <li>An ongoing all-encompassing education programme should be<br/>backed up by government leadership in adoption of low carbon<br/>transport. For example, we strongly support government transport</li> </ul>   |

|   | procurement processes giving priority to EVs and/or shared mobility<br>alternatives. In this way, New Zealanders will start to see what the<br>new normal should look like, as modelled by our elected<br>representatives.  |
|---|---|
|   | <ul> <li>Remove regulatory barriers (see question 2 above);</li> </ul>  |
|   | <ul> <li>Government should improve access to decision makers and be open<br/>to partnering with the private sector to trial innovative ideas and<br/>speed up progress towards targets, (see our cover letter and<br/>question 1 above).</li> </ul>   |
| Aligning systems and tools –<br>Government accountability   |   |
| 21. In addition to the CCC<br>monitoring and reporting<br>on progress what other<br>measures are needed to<br>ensure government is held<br>accountable?   | Whilst the ERP is a comprehensive document, there is little clarity or specific commitment as to how targets will be achieved. To incentivise action, Mercury would like to see more specific and short-term goals included in the ERP. Short term goals are essential steppingstones if longer term targets are to be met. Further, government cycles and governance mean no one is around to be held accountable to longer term targets, so there must be short term targets to hold this government accountable. |
|   | Regarding specificity of targets, please refer our response to question 5 on<br>the need for more clarity on what is expected of the electricity sector as part<br>of the ERP.  |
| 22. How can new ways of<br>working together, like<br>mission-orientated<br>innovation, help meet our<br>ambitious goals for a fair<br>and inclusive society and a<br>productive, sustainable<br>and climate-resilient<br>economy? | Mercury is strongly supportive of mission-oriented innovation as it aligns with<br>our view that government and the private sector need to be working more<br>collaboratively in order to achieve our climate change goals. We would<br>welcome further discussion on this matter with government.  |
| 23. Is there anything else you<br>wish to share in relation to<br>government accountability<br>and coordination?  | As mentioned in our cover letter, Mercury would like the government to<br>establish an Energy Sector Taskforce to provide advice and support to the<br>government on climate related policy decisions. Sometimes government is<br>removed from the realities that businesses face and an advisory group of this<br>nature could help keep policy supportive of the decarbonisation actions<br>required.   |
| Funding and financing   |   |
| 24. What are the main barriers<br>or gaps that affect the flow<br>of private capital into low-<br>emissions investment in<br>Aotearoa?  | Please see our response to question 2 above.  |
| 26. What else should the<br>Government prioritise<br>in directing public and<br>private finance into<br>low-emissions<br>investment and<br>activity?  | <ul> <li>Look at fitness for purpose of existing systems and funding mechanisms to support the transition away from private vehicle travel. E.g. whilst the Public Transport Operating Model (PTOM) that is currently under review may have facilitated adequate outcomes in the context of its original objectives, it is likely insufficient to support the transition to cleaner public transport that is required now. For example, it does not readily address how bus operators will be</li> </ul>            |

|   | <ul> <li>incentivised to upgrade to more costly electric fleets. Similarly, we agree that the National Land Transport Fund (NLTF) was designed to maintain "the essentials" of New Zealand's transport system and that emissions reduction is a step change far beyond what it was ever intended to do. This must be rectified. Mercury supports better alignment across disciplines and across central and local government so that integrated planning can be progressed and backed up by the requisite funding and prioritisation of transport decarbonisation initiatives.</li> <li>Make it easier for a range of businesses in the private sector to access funds such as GIDI through increased funding and simplified</li> </ul> |
|---|---|
|   | and broader application.  |
|   | <ul> <li>We support initiatives like the State Sector Decarbonisation Fund<br/>and clean-powered public service fund to decarbonise process heat<br/>and vehicles in government. Government should be taking a lead<br/>and modelling the behaviours expected of the wider community and<br/>private sector.</li> </ul>   |
|   | <ul> <li>Spending should be prioritised using clear and transparent criteria<br/>towards lowest marginal cost abatement over short- and long-term<br/>horizons.</li> </ul>  |
|   | <ul> <li>Providing targeted funding and other support for developing, trialling<br/>and supporting new technology and approaches. For example, we<br/>support broadening the Low Emissions Vehicle Contestable Fund to<br/>become the Low Emissions Transport Fund with increased funding.<br/>The settings on targeted funding and support like these need to be<br/>carefully selected (e.g. funding too focussed on early stage research<br/>could come at the cost of scaling commercial business models and<br/>vice versa.)</li> </ul>  |
|   | <ul> <li>The private sector has skill, expertise and funding to contribute to<br/>decarbonisation that will help accelerate action and progress towards<br/>targets. To enable such partnerships, we encourage the government<br/>to think about specific ways in which it can encourage and participate<br/>in innovative low-carbon trials in both transport and other sectors.<br/>This may require collaboration across agencies to identify<br/>opportunities for innovation, proactively seek expressions of interest<br/>from outside government and a suitably streamlined approach to<br/>"procurement" for trials.</li> </ul>   |
| 27. Is there anything else<br>you wish to share in<br>relation to funding and   | Please see our response to question 16 above.   |
| financing?  |   |
| Emissions pricing   |   |
| 28. Do you have sufficient<br>information on future<br>emissions price paths<br>to inform your<br>investment decisions?       | Yes, please see our response to Q59.  |
| 30. Do you agree the<br>treatment of forestry in<br>the NZ ETS should not<br>result in a delay, or<br>reduction in effort, in | In principle yes, the faster Aotearoa can decarbonise the better but it will be<br>important to consider the costs and benefits along with risks and<br>opportunities.  |

| reducing gross<br>emissions in other<br>sectors of the<br>economy? 30   |   |
|---|---|
| 31. What are your views<br>on the options<br>presented above to<br>constrain forestry<br>inside the NZ ETS?<br>What does the<br>Government need to<br>consider when<br>assessing options?<br>What unintended<br>consequences do we<br>need to consider to<br>ensure we do not<br>unnecessarily restrict<br>forest planting? | We have no specific comments, it will be important to fully assess all the options with a focus on avoiding unintended consequences.  |
| 32. Are there any other<br>views you wish to<br>share in relation to<br>emission pricing?   | See our comments at question 16 above on the importance of developing<br>and implementing a policy on recycling revenue from the NZ ETS and<br>maintaining a work programme to monitor and continuously improve the<br>implementation of the NZ ETS.  |
| Planning  |   |
| 33. In addition to resource<br>management reform,<br>what changes should<br>we prioritise to ensure<br>our planning system<br>enables emissions<br>reduction across<br>sectors? This could<br>include part erablication   | The proposed emission budgets and emission reduction plans under the Climate Change Response Act 2002 are heavily dependent on increased electrification. Mercury has previously submitted to the $CCC^6$ and the Environment Select Committee ( <i>ESC</i> ) Inquiry on the exposure draft of the Natural and Built Environments Bill (NBEB) <sup>7</sup> regarding the need for strong government policy to prioritise consenting and building the renewable electricity generation and transmission projects to meet the expected increased demand for electricity in the necessary timeframes.              |
| emission impact   | Copies of those submissions are attached.   |
| quantification for<br>planning decisions,<br>improving data and<br>evidence, expectations<br>for crown entities,<br>enabling local<br>government to make<br>decisions to reduce<br>emissions.   | The ESC Inquiry report <sup>8</sup> identifies that there is more to be done to incorporate the built environment into the purpose of the NBEB. Two important tools have been drafted in the NBEB – 'outcomes' and 'limits', which are intended to trickle down into a National Planning Framework, and eventually plans enabling activities. The direction that the outcomes and limits sections take in the NBEB is therefore very important. Mercury sees a real risk that neither the 'outcomes' nor 'limits' adequately provide for the scale of electrification that must be required to achieve the ERP. |
| 61113310113.  | In relation to the NBEB's outcomes', the ESC Inquiry report has recognised<br>the important nexus between reducing greenhouse gas emissions and   |

<sup>6</sup> <u>https://haveyoursay.climatecommission.govt.nz/comms-and-engagement/future-climate-action-for-aotearoa/consultation/view\_respondent?uuld=470208098</u>

<sup>7</sup> https://www.parliament.nz/en/pb/sc/submissions-and-advice/document/53SCEN\_EVI\_111944\_EN5781/mercury-nz-limited

<sup>8</sup> Environment Select Committee Inquiry on the Natural and Built Environments Bill: Parliamentary Paper to the House of Representatives 1 November 2021 recommendation 5.

| increasing the 'utilisation' of renewable energy (redrafted Outcome $13A(c)(i)$ ).<br>However, the section does not specifically provide for 'electrification' or<br>recognise the need for the development of additional electricity generation.   |
|---|
| Moreover, there remains no prioritisation between outcomes. The renewable<br>energy/climate change outcome sits alongside a range of other outcomes<br>without any elevation or consideration of its overarching nature and<br>significance with respect to achieving the CCRA's Emissions Budgets and<br>the ERP. Consequently, there is a considerable risk that climate change<br>outcomes may be overlooked in pursuit of other outcomes.   |
| The NBEB's environmental 'limits' as proposed will be set for a number of topics, none of which specifically include climate change. So, it remains unclear if limits could be set for the climate system which is not specifically identified in the redrafted clause 12B(1). As currently drafted, the 'limits' have the potential to exclude or prevent critical electrification projects (both generation and transmission).  |
| The ESC identified that there is a work programme to determine how the NBEA can be used to progress the achievement of emissions reduction goals under the Climate Change Response Act and to resolve conflicts between outcomes, but how this is achieved remains unclear <sup>9</sup> . The NBEB in its current form does not yet provide the clear and strong direction for provision of renewable energy and electrification needed in the ERP.   |
| Given the above, while the NBEB includes recognition of the importance of renewable energy use as a means of reducing emissions, a weakness remains as to specific recognition of the role renewable electricity plays and how conflicts with other outcomes are to be resolved. As currently drafted, there is a real risk that the NBEB will hamper, rather than support or promote the ERP and the achievement of the budgets.   |
| The ERP represents a substantial opportunity to restate the electrification challenge and chart a direction for the necessary links between the Climate Change Response Act 2002 (CCRA) and the NBEA. We suggest that the ERP identify the relationship between the National Planning Framework and Regional Spatial Plans under the Strategic Planning Bill and the CCRA's Emissions Budgets, and the strategic documents that give effect to the ERP (including in particular the National Energy Strategy). Specifically, we suggest that the ERP provides that: |
| <ul> <li>the National Energy Strategy identify the additional expected<br/>demand for renewable electricity generation necessary to provide<br/>for the transition away from fossil fuel energy use; and</li> </ul>   |
| <ul> <li>the NBEA reform and implementation processes that will be ongoing<br/>throughout the first emissions budget should consider:</li> </ul>  |
| <ul> <li>setting environmental limits related to GHG emissions that<br/>are consistent with emissions budgets;</li> </ul>   |
| <ul> <li>requiring the National Planning Framework and Regional<br/>Spatial Plans to be consistent with the ERP and emissions<br/>budgets;</li> </ul>   |
| <ul> <li>requiring the National Planning Framework and Regional<br/>Spatial Plans to seek to provide for adequate renewable<br/>generation consistent with the ERP and the strategic<br/>documents issued under it, in particular the National Energy<br/>Strategy; and</li> </ul>  |
| provide for emission impact quantification in relation to development projects  |

<sup>&</sup>lt;sup>9</sup> Ibid -recommendation 23.d. and page 44.

|  | so that decision-makers have a strong evidence basis for the cumulative benefits to be gained from emission reduction initiatives.   |
|--|--|
| 34. What more do we need<br>to do to promote urban<br>intensification, support<br>low-emissions land<br>uses and concentrate<br>intensification around<br>public transport and<br>walkable<br>neighbourhoods?              | It is contemplated that the Strategic Planning Act will through regional spatial strategies provide a means of better integrating urban growth and infrastructure provision. Regional spatial strategies provide an opportunity for transportation planning and urban intensification to be conceptualised with emissions reduction outcomes in mind. The aspiration is to bring together processes that are currently highly fragmented across resource management, transport and local government legislation and regulation. The ERP could play a valuable role in identifying opportunities for digital data management and emission modelling to support decisions on intensification and transport mode choice and design. By way of example, airsheds are currently managed by regional councils and vehicle emissions are regulated under the Land Transport Act <sup>10</sup> but there is no means to manage overall emissions. The Infrastructure Commission has similarly identified the need to make the right infrastructure and to reflect the true cost of carbon in |
|  | infrastructure projects <sup>11</sup> .<br>An integrated approach to data management to improve access to quality<br>data would lead to more informed decisions and a greater likelihood that<br>emission reduction outcomes can be achieved.  |
| Research   |  |
| 40. What are the opportunities<br>for innovation that could<br>generate the greatest<br>reduction in emissions?<br>What emissions reduction<br>could we expect from<br>these innovations, and how<br>could we quantify it? | The private sector has skill, expertise and funding to contribute to decarbonisation that will help accelerate action and progress towards targets. To enable such partnerships, we encourage the government to think about specific ways in which it can encourage and participate in innovative low-carbon trials. This may require collaboration across agencies to identify opportunities for innovation, proactively seek expressions of interest from outside government and a suitably streamlined approach to "procurement" for trials.  |
| Behaviour change   |  |
| 40. What information, tools or<br>forums would encourage<br>you to take greater action<br>on climate change?   | <ul> <li>Please see our response to question 19 above.</li> <li>Mercury would like to see more action from government in this regard and a behaviour change fund may support acceleration of measures such as: <ul> <li>A climate change campaign focusing on the positive actions consumers can take to reduce emissions such as reducing vehicle kilometres travelled (VKT) using public transport, e-mobility and sharing models and adopting active modes of transport; and</li> <li>Government showing leadership in the adoption of electric vehicles and use of alternative modes of transport.</li> </ul> </li> </ul>  |
| 41. What messages and/or<br>sources of information<br>would you trust to inform<br>you on the need and   | As we have mentioned above, a government decarbonisation campaign will<br>help create public awareness on changes required to incentivise action.<br>We also suggest that some form of public emissions tracker that identifies<br>progress towards targets in each sector might be a useful source of   |

 <sup>10</sup> Land Transport Act 1998 s155 (1)(a).
 <sup>11</sup> Infrastructure Commission Draft Infrastructure Strategy - Rautaki Hanganga o Aotearoa 12 October 2021; pages 31 and 44.

| benefits of reducing your<br>individual and/or your<br>business emissions?  | information/reference tool going forward.  |
|---|--|
| Transitioning key sectors<br>Transport  |  |
| 52. <b>Transport</b> Do you support<br>the target to reduce VKT<br>by cars and light vehicles<br>by 20% by 2035 through | Yes, Mercury supports the target to reduce VKT by cars and light vehicles by 20% by 2035 through providing better travel options. We commend the Ministry of Transport (MoT) for its consultation "Hikina te Kohupara" and the incorporation of feedback from that consultation into the ERP.  |
| providing better travel<br>options, particularly in our<br>largest cities, and<br>associated actions?                   | The list of measures to reduce VKT is comprehensive. Funding should be<br>unlocked to enable quick wins and spending overall should be prioritised<br>towards lowest marginal cost abatement across short and long-term<br>horizons. Further recommendations include:  |
|   | a. The government must begin by demonstrating its own commitment<br>to transport decarbonisation. For example, the government can show<br>such leadership through an ongoing all-encompassing public<br>education programme as well as leading the field in its procurement<br>of low carbon transport.  |
|   | b. We also believe that there are key pieces of work that will enable<br>and accelerate other initiatives. For example, addressing limitations<br>in the PTOM would accelerate decarbonising buses and help keep<br>our cities moving. Increased funding for the NLTF will also be<br>necessary to unlock these and other initiatives.   |
|   | c. Priority should be given to initiatives that improve alignment between<br>central and local government. Some initiatives could be combined<br>with others to provide even greater efficiencies. One way to advance<br>such an integrated transport decarbonisation approach could be to<br>include transport as part of the National Energy Strategy.   |
|   | d. Public and private sector partnerships will be necessary as not all<br>modes (e.g. shared mobility) and supporting infrastructure (e.g.<br>secure bike parking facilities) will be deployed by the public sector.<br>Public and private sector interaction will also foster greater<br>innovation and attractiveness for individuals making transport<br>choices around convenience, cost and comfort.  |
|   | e. We would support investigating changes to the usual procurement<br>and <b>ownership arrangements for zero-emission public</b><br><b>transport</b> , depots and supporting infrastructure. This could be an<br>opportunity for non-traditional transport industry participants to<br>contribute beneficially.  |
|   | f. Pricing is an important tool to consider along with others bearing in<br>mind that it can be punitive and therefore equitable transition<br>considerations will need to be factored in.   |
| 53. Do you support the target<br>to make 30% of the light<br>vehicle fleet zero-  | Mercury supports the target to make 30% of the light vehicle fleet zero-<br>emissions by 2035 and the associated actions. We are pleased to see<br>government commitment to:   |
| emissions vehicles by 2035, and the associated actions?   | a. implement community solutions to make low-emission transport<br>options accessible for low-income New Zealanders. The CCC<br>recommended there may be benefits in fostering vehicle leasing<br>options and new models of shared ownership of transport, such as<br>by linking new housing builds to communal transport offerings.<br>Government could support innovation in this regard by partnering<br>with the private sector to foster innovative transport models for itself |

|  | <ul> <li>and its agencies. The private sector has skill, expertise and funding to contribute to decarbonisation that will help accelerate action and progress towards targets. To enable such partnerships, we encourage the government to think about specific ways in which it can encourage and participate in innovative low-carbon trials. This may require collaboration across agencies to identify opportunities for innovation, proactively seek expressions of interest from outside government and a suitably streamlined approach to "procurement" for trials.</li> <li>b. work with industry on addressing supply constraints facing low-emissions vehicles. In our view this is a priority and the government should establish its clean vehicle sector leadership group to tackle this issue as a matter of urgency.</li> </ul>    |
|--|---|
| 54. Do you support the target<br>to reduce emissions from<br>freight transport by 25% by<br>2035, and the associated<br>actions?   | We support the target to reduce emissions from freight transport by 25% by 2035 and the associated actions.<br>Road freight will be crucial for years to come so a focus on decarbonising transport fuels is crucial. Electrification, biofuels, hydrogen-derived e-fuels and hydrogen could all play a role in the transition. Initiatives should be carried out in close consultation with the private sector in order to drive rapid emissions improvements.   |
| 55. Do you support the target<br>to reduce the emissions<br>intensity of transport fuel<br>by 15% by 2035 and the<br>associated actions?   | Mercury supports the target to reduce the emissions intensity of transport<br>fuel by 15% by 2035 and the associated actions.<br>We would like to see the biofuels mandate expanded to include other all<br>"drop-in" low emissions fuels. Given the potential for slow turnover of fleets<br>and/or supply/cost/technological barriers to direct electrification or hydrogen<br>fuel cells, the Government should support the exploration of both biofuels<br>and e-fuels (green hydrogen-derived synthetic fuels) as part of the mandate.<br>Biofuels and e-fuels will both have roles to play in transport decarbonisation,<br>especially since the production of the latter may offer a stepping-stone<br>towards the direct use of green hydrogen in transportation and the wider<br>economy.  |
| 56. The CCC has<br>recommended setting a<br>time limit on light vehicles<br>with internal combustion<br>engines entering, being<br>manufactured, or<br>assembled in Aotearoa as<br>early as 2030. Do you<br>support this change, and if<br>so, when and how do you<br>think it should take effect? | Mercury supports an ICE phaseout that allows for a timely yet prompt<br>transition to EVs and/or public transport/active substitutes. A phaseout with<br>ban on the import of ICE vehicles in the early 2030s would send a strong<br>signal to manufacturers about the future supply requirements of our fleet. It<br>would also remove the risk that New Zealand becomes a dumping ground for<br>ICE vehicles when other countries with right hand drive vehicles have<br>implemented a ban.   |
| 57. Are there any other views<br>you wish to share in<br>relation to transport?  | Throughout our submission we have referred to how the private sector.<br>Government could encourage better collaboration by identifying its key<br>decision makers and fast tracking its engagement with private sector<br>participants who have innovative solutions that will accelerate<br>decarbonisation. has skill, expertise and funding to contribute to<br>decarbonisation that will help accelerate action and progress towards<br>targets. To enable such partnerships, we encourage the government to think<br>about specific ways in which it can encourage and participate in innovative<br>low-carbon trials. This may require collaboration across agencies to identify<br>opportunities for innovation, proactively seek expressions of interest from<br>outside government and a suitably streamlined approach to "procurement" |

|  | for trials.   |
|--|---|
| Energy and industry  |   |
| 58. Energy Strategy In your<br>view, what are the key<br>priorities, challenges and<br>opportunities than an<br>energy strategy must<br>address to enable a<br>successful and equitable<br>transition of the energy<br>system? | Development of the NES provides an opportunity to bring together the wealth<br>of knowledge being generated in both public and private sectors to evaluate<br>the most optimal pathway for the decarbonisation of the energy system<br>within the New Zealand economy. This objective could be best supported by<br>establishing a forum that brings together policy makers, regulators and<br>industry experts to more purposefully consider the energy transition<br>challenges and opportunities under the NES development process. Please<br>see our cover letter for a more complete discussion of this issue. |
|  | We also note the Low Carbon Energy Roadmap work completed by the Aotearoa Circle. This is an important input into the NES that identifies actions for all parties across the sector.  |
|  | Mercury recognises the enormity of the task and looks forward to<br>participating in collaborative discussions. There are however some key<br>priorities that we would like to see addressed in the NES and these are set<br>out below.   |
|  | Key principles  |
|  | The NES should promote a whole of system approach - balancing the trilemma of energy security, equity and sustainability. Within the overarching parameters of the trilemma the NES should prefer opportunities for the decarbonisation transition that are simple, easily reversible, cost efficient and practically implementable whilst at the same time provide the certainty required to maintain investor confidence, promote competition and minimise unintended consequences.   |
|  | Long term priorities  |
|  | These are the most difficult issues to resolve but if government can set a clear pathway for New Zealand, we will be on track to ensure reliability and security of supply with 100% renewables.  |
|  | a. Fossil Fuel phase out  |
|  | Mercury agrees with the conclusions of the recent final report by the CCC that natural gas will be a critical fuel to ensure security of supply and generation flexibility to support renewables development while maintaining least cost electricity supply over the transition. We are encouraged by the ERP's recognition that a 100% renewable target should be treated as aspirational, reflecting the CCC's view that thermal support will be necessary beyond 2030 to ensure security of supply and general affordability.   |
|  | The timing and sequence of the transition away from fossil fuels is<br>however critical. Without an appropriately managed transition for fossil<br>fuels from the electricity system Aotearoa runs the risk of perversely<br>increasing emissions to ensure security of supply (as is currently<br>occurring with the increase in coal generation due to the shortage of gas<br>supplies) or raising electricity prices and delaying the transition of the<br>transport and process heat sectors to renewable electricity and<br>alternative fuels.   |
|  | The NES should bring together the many existing industry and<br>government workstreams underway focused on maintaining security in a<br>more renewable market including MBIE's NZ Battery project, the<br>Electricity Authority's future security and resilience project, price<br>discovery project (being developed by MDAG) and further workstreams  |

|    | around managing the decarbonisation transition (forthcoming post<br>submissions on the wholesale market monitoring review Nov 2021),<br>along with Contact's Thermal Co proposal, Genesis's capacity market<br>proposal and Southern Hydrogen a proposal to build commercial green<br>hydrogen export facility in Southland.  |
|----|---|
|    | Please also see our comments at question 61 below in relation the gas phase out.  |
| b. | Dry Year Storage solution should support market signals and long-<br>term investment  |
|    | Mercury supports the government's objective to identify alternatives to fossil fuel generation in the long-term to manage dry year risk.  |
|    | The New Zealand Battery Project (NZ Battery) is considering options to resolve the dry year storage problem with a focus on the large scale centralised pumped storage proposal at Lake Onslow. While this solution to the dry year challenge could enable the country to reach 100% renewable electricity, it could also cost taxpayers billions of dollars which would be better allocated to pursuing lower cost abatement options in other sectors such as transport and industry. Further, a large scale pumped hydro scheme would be a major intervention into the electricity market creating significant uncertainty and risk during a period where capital attraction to the sector is highly important if the country is to meet its decarbonisation goals.   |
|    | Reliance on a single solution, like Onslow would require it to be the most<br>efficient option by a margin significant enough to justify sole reliance on<br>it. Diversifying solutions with a combination of renewable generation<br>overbuild, energy storage and demand response would help spread this<br>risk. NZ Battery must ensure that Onslow and other least cost options<br>are evaluated and that there is a credible assessment of the risks and<br>opportunities offered by each alternative. Mercury strongly supports<br>transparent and robust decision-making processes for <b>all</b> options with<br>stage gates to test Onslow against other emerging dry year solutions,<br>(for example, Meridian and Contact's commercial scale green hydrogen<br>export hub project).                    |
|    | The best solutions are complex and will reveal themselves over time and<br>as technology develops. The NES must ensure that our dry year storage<br>solution is able to evolve at the right pace, in accordance with the right<br>processes and in support of market signals and long-term investment.  |
| c. | Prioritise removing barriers to investment - consenting   |
|    | As mentioned above at question 2, our consenting environment in New Zealand is currently a significant barrier to progress.   |
|    | Mercury supports the objectives of the resource management system reform but the task of electrifying the economy is critical, urgent and needs to be done at scale. New Zealand is currently not on track to meet our climate change targets, nearly 60% of our total energy requirements will need to come from electricity by 2050 up from 25% in 2016. As much generation will need to be built in the next 15 years as was built in the past 40 years. Transpower has estimated that approximately 70 new grid-scale connections will be required, 40 to connect new power stations and 30 to accommodate increased electricity demand on the grid due to electrification. This represents on average close to five new connections per annum - a significant increase in Transpower's workload. Small scale |
|    | distribution and generation will play a role but the bulk of the  |

|  | infrastructure will need to be built at scale.   |
|--|--|
|  | This scale of investment in new generation and transmission will require<br>a regulatory framework that is enabling. We are concerned that the<br>NBEA will not provide the necessary policy coherence and direction to<br>achieve the transformational blueprint required.  |
|  | If we are to encourage continued investment in renewable generation to<br>achieve Net Zero by 2050 the NES must prioritise climate change<br>response outcomes over other outcomes to protect and enhance various<br>biophysical attributes of the environment, especially where these can be<br>mitigated.  |
|  | Please also see our response to question 33.   |
| 59. <b>Energy strategy</b> What<br>areas require clear<br>signalling to set a pathway<br>for transition? | The NES should be underpinned by a clear sense of how the various<br>components of the energy system interact with each other in a dynamic<br>sense in order to avoid introducing policies and measures that have<br>unintended consequences.  |
|  | Electricity market settings  |
|  | Mercury considers that the current electricity market policy settings are sending the right signals for investment in new renewable electricity generation.  |
|  | The electricity market has already delivered Aotearoa New Zealand's most significant emissions reduction. Due to flat demand growth between 2006 to 2013 and the resulting reduction in wholesale prices, a rebalancing of supply occurred with the efficient retirement in 2015 of around 450MW of thermal gas-fired generation in Auckland by both Mercury and Contact Energy. This permanently removed 2 million tonnes per annum from New Zealand's carbon emissions, equivalent to entire annual emissions of the aviation sector in Aotearoa New Zealand. Mercury is not aware of any larger contribution to reducing emissions from any sector over this period. Most importantly, this occurred through the market without the need for any government intervention and without any costs or risks to New Zealand taxpayers. |
|  | Transpower has estimated that overall demand for electricity will grow by around 55% to 2050, largely due to the electrification of transport while decarbonizing process heat and projected population growth make up the and the remainder. <sup>12</sup> To meet this demand, the CCC expects renewable electricity generation will need a build of about 13TWh. <sup>13</sup> The electricity sector has already committed \$2 billion to new renewable generation, equivalent to 8% of national demand. This plus further expected near-term investment will get New Zealand to 95% renewable electricity generation in the next 5 years. This development will bring the sector within the emissions intensity required to contribute to a 1.5 degree future.  |
|  | Given the size of this investment challenge it is imperative that the investment signals provided through the current market frameworks are maintained to give confidence to capital holders to continue to invest in the electricity sector.  |

<sup>12</sup><u>https://www.transpower.co.nz/about-us/transmission-tomorrow</u>

<sup>13</sup> <u>https://ccc-production-media.s3.ap-southeast-2.amazonaws.com/public/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa.pdf</u>, page 175

|   | As the penetration of renewable electricity generation increases there will be<br>a need to ensure that the market continues to adapt and is flexible to<br>change. This is particularly the case as the sector retires thermal generation<br>which currently plays an important role in signalling the marginal cost of<br>generation for future investment. Market settings must continue to evolve so<br>they are fit for purpose and deliver the best outcomes for consumers.<br>Mercury welcomes debate on change to our market settings and is<br>contributing positively to a number of reviews currently in progress. <sup>14</sup> We<br>would welcome the opportunity to share some of this work with MfE and be<br>part of any industry group formulated to help the government develop a<br>strategy. |
|---|---|
|   | NZ ETS Settings   |
|   | Mercury agrees with the CCC that the main driver of emissions reduction<br>should be a broad-based carbon price provided by the NZ ETS. Rising<br>carbon prices will incentivise Mercury to further develop carbon capture and<br>storage technology for the removal of greenhouse gas emissions from our<br>geothermal plants and reinjection into nearby reservoirs. Actions such as<br>this will contribute to further emissions reductions for the energy sector.   |
|   | While rising carbon prices will impact wholesale electricity prices in the short<br>term until fossil fuels are phased out this will need to be managed as part of<br>the transition to a fully renewable electricity system.   |
|   | Mercury supports the review of current governance arrangements <sup>15</sup> and the reform of industrial allocation. Work on recycling the revenue from the NZ ETS to those who are disproportionally affected by rising energy costs will be an important work stream for ensuring a just transition.   |
| 60. Setting targets for the<br>energy system What level<br>of ambition would you like<br>to see Government adopt,<br>as we consider the CCC<br>proposal for a renewable<br>energy target? | It is pleasing to see Government is open to setting an energy system target<br>rather than focusing solely on renewable electricity generation. This is<br>consistent with the CCC recommendation to treat 100% renewable as<br>aspirational and aim for 95-98%. Mercury supports a further review of this<br>aspirational target in 2024 when decisions on NZ Battery are due. It is also<br>consistent with the recent work commissioned by Meridian and Contact<br>looking at establishing a commercial green hydrogen enterprise at the<br>bottom of the SI which indicated a huge cost difference between achieving<br>99 versus 100% renewable electricity generation.  |
|   | In relation to the level of ambition for a renewable energy system target Mercury supports the CCC recommendation of setting a target of 50% of all energy consumed coming from renewable sources by 2035 and treating the existing target of 100% renewable electricity by 2030 as aspirational. We agree with the CCC that replacing the renewable electricity target with a goal of 95-98% renewable electricity by 2030.  |
|   |   |

<sup>14</sup> We refer MfE to Mercury's submission to the CCC earlier this year

(https://haveyoursay.climatecommission.govt.nz/comms-and-engagement/future-climate-action-for-

aotearoa/consultation/view respondent?uuld=470208098) and work being undertaken by various forums on the renewables transition such as the Aotearoa Circle and Electricity Authority.

<sup>&</sup>lt;sup>15</sup> Mercury submission to Ministry for the Environment 'Designing a Governance Framework for the NZ ETS', September 2021.

| 61. | <b>Gas phase out</b> What are<br>your views on the<br>outcomes, scope,<br>measures to manage<br>distributional impacts,<br>timeframes and approach<br>that should be considered<br>to develop a plan for<br>managing the phase out of<br>fossil gas?   | There are a range of measures that could be considered to provide greater certainty to the gas sector around how gas generation and supply assets could continue to operate to support decarbonisation, while maintaining security of supply and overall affordability. These are areas Mercury would endorse being addressed through an energy strategy process. Given the pressing need for greater certainty, discussions around complimentary market measures should be fast-tracked in advance of a wider ranging energy strategy and could form an input into that final document.<br>A good starting point for this work is the report on gas market settings prepared for MBIE by the Gas Industry Company and the NZ Gas Infrastructure Future Working Group Findings Report. <sup>16</sup> It will be important that Aotearoa avoid the issues that have plagued electricity markets in the UK and Texas when transitioning away from fossil fuels. |
|-----|--|---|
| 68. | Supporting development<br>of low emissions fuels<br>What level of support could<br>or should Government<br>provide for development of<br>low-emissions fuels,<br>including bioenergy and<br>hydrogen resources, to<br>support decarbonisation of<br>industrial heat, electricity<br>and transport? | We would like to see the biofuels mandate expanded to include other all "drop-in" low emissions fuels. Given the potential for slow turnover of fleets and/or supply/cost/technological barriers to direct electrification or hydrogen fuel cells, the Government should support the exploration of both biofuels and e-fuels (green hydrogen-derived synthetic fuels) as part of the mandate. Biofuels and e-fuels will both have roles to play in transport decarbonisation, especially since the production of the latter may offer a stepping-stone towards the direct use of green hydrogen in transportation and the wider economy.   |
| 69. | Are there any other<br>views you wish to share<br>in relation to energy?   | Mercury notes the call in the consultation document for additional actions<br>from industry to help support emission reductions, particularly in the first<br>emissions period. It has been challenging to identify the specific contribution<br>to emissions reduction modelled from the electricity sector in the high and<br>low policy settings due to the aggregation with "energy and industry" and we<br>would support the government providing a more detailed break-down to help<br>inform the electricity sector. As noted in response to question 3 we consider<br>there may be potential to reduce the emissions from geothermal through<br>carbon sequestration and clarity would help the sector to understand if this<br>would be considered additional to what was assumed in the modelling.  |

<sup>&</sup>lt;sup>16</sup> 'Gas Market Settings Investigation: Report to the Minister of Energy & Resources', Gas Industry Company, 30 September 2021. NZ Gas Infrastructure Future Working Group Findings Report, 11 October 2021.

From:Michelle AmorTo:climate consultation 2021Subject:Exotic pinesDate:Monday, 22 November 2021 12:41:43 pm

### **MFE CYBER SECURITY WARNING**

## This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Hello I am asking the NZ government to limit offsetting using afforestation on farmland. Rather than using farmland to offset carbon we could focus on adding more green in the city, and incorporating more green architecture in all major cities in New Zealand. There is a lot of evidence that planting a monoculture forest is extremely detrimental to ecosystems. Our heart rates actually increase in these types of environments and does the opposite of what a healthy forest does. If you wish to offset carbon there are other ways to create biodiversity and offset carbon, but monoculture is not the way.

Cheers, Michelle


# **MTA Submission**

To the

**Ministry for the Environment** 

on

Te hau mārohi ki anamata - Transitioning to a low-emissions and climate-resilient future

24 November 2021

Dear Sir / Madam

Submission: Te hau mārohi ki anamata - Transitioning to a low-emissions and climate-resilient future

This submission is from:

Motor Trade Association (Inc) PO Box 9244 Marion Square Wellington 6141



Thank you for the opportunity for MTA to provide comment on transitioning to a low-emissions and climate-resilient future regarding the views of and its effect on the automotive industry.

Yours sincerely,



Advocacy & Strategy Manager

Motor Trade Association PO Box 9244 Marion Square Wellington 6141 Phone: 04 385 8859



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### About the Motor Trade Association (MTA)

The Motor Trade Association (Inc) (MTA) was founded in 1917 and in 2017 celebrated 100 years of trust with the NZ motoring community. MTA currently represents over 3,800 businesses within the New Zealand automotive industry and its allied services. Members of our Association operate businesses including automotive repairers (both heavy and light vehicle), collision repair, service stations, vehicle importers and distributors and vehicle sales.

The automotive industry employs 60,000 New Zealanders and contributes around \$3.5 billion to the New Zealand economy.

#### MTA Position in the climate change discussion

MTA, through the depth of its expertise and networks, is a motor industry champion that:

- recognises the need for pragmatic action to reduce emissions to limit climate change
- recognises that the take up of low emission vehicles (LEVs) and electric vehicles (EVs) is an important (but not the only) part of that action
- has the expertise to lead in defining:
  - o future uptake of low emission vehicles including EVs
  - o motor industry emission reduction targets.

MTA acknowledges that carbon-based transport emissions are a large share of all greenhouse gas emissions. The heavy reliance placed on the transport system means that any transition must be practical – workable and fair – for all New Zealanders.

New Zealand must look at all policy options, adopt all possible technologies, and influence all relevant actors (Government, business, and consumers). We must especially look at the existing fleet, because this is the source of the bulk of our emissions. Tweaking the mix of vehicles coming into the country will only slowly move us towards better outcomes.

The Government has placed the onus on the motor industry to achieve emission reductions in five years that other countries have worked towards for over 20 years. We need to be clear about the timing and implementation of all relevant policies to ensure a just transition to a low carbon economy. The order in which policies are implemented will also be key, as the impact of one policy being realised before others may lead to unjust transition outcomes.

Businesses require a stable, predictable policy environment to enable investment in ways that deliver on the country's 2050 climate targets. Policymakers and industry can influence EV take up beyond 2030 by putting in place the right settings before that time. MTA is not seeking to scuttle plans, rather we want realistic plans implemented over realistic timeframes.

### Key recommendations

In our submission to the Climate Change Commission in March 2021, MTA highlighted some key policy recommendations relating to addressing emissions reductions. We highlighted many of the same suggestions in response to the Ministry of Transport's consultation on its proposed *Pathways to Net Zero by 2050*. We now reiterate our views in response to this further consultation designed to seek views to shape the development of New Zealand's Emissions Reduction Plan:

#### 1. Technology:

- a. No ICE ban we should continue to leverage improvements in internal combustion engine (ICE) drivetrain technology for as long as possible.
  - i. Changing demand among consumers through education and incentives will ensure products are sourced to meet demand. Other disincentives, such as rising fuel prices (due to ETS and/or biofuel components), and positive policies such as improving public transport, will help modify behaviour.
- b. Encourage emissions reductions through a mix of fuels and drivetrains (hybrid, plug-in hybrid electric vehicle (PHEV)), biofuel blends in the main fuel supply, hydrogen in heavy transport, etc).
- c. Support the roll-out of accessible and convenient charging infrastructure (by location and easy-to-use consumer payment systems).

#### 2. Behaviour:

- a. Provide targeted financing packages to support household uptake of low emission vehicles (purchase support incentives, tax breaks, etc).
- b. Introduce a coordinated end-of-life waste programme for vehicle scrappage, which includes interlinking existing or to-be-developed waste management schemes and a financial incentive to vehicle owners to dispose of older vehicles.
- c. Introduce an emissions testing regime for in-service vehicles in the existing fleet to ensure all drivers are better educated about the emissions profile and impact of their vehicle.
- d. Introduce accelerated depreciation allowances for industry fleet vehicles, Government vehicles and rental fleets, to facilitate the supply of the used EV fleet for household purchase.
- e. Introduce differential road user charges to incentivise take up of low CO<sub>2</sub> emission vehicles including hybrid (ICE/Electric) and EVs.

#### 3. Regulatory:

- a. Coordinate the timing of import restrictions on vehicles with the expected roll-out of alternative transport options, such as improved public transport and active modes (cycling)
- b. Coordinate product stewardship schemes to assist with the smooth implementation of an end-of-life vehicle disposal scheme.

#### 4. Mitigating risks:

a. New technologies will require new skills and may draw new candidates to the automotive industry. Government should implement permanent support for

firm-based training, such as 'Apprenticeship Boost', to facilitate more workplace training to service and repair the new-tech vehicle fleet.

- b. Develop a support plan for Just Transition for affected businesses.
- c. Recognise the supply chain risk New Zealand sources vehicles from offshore supply with time lags in the case of used imports. An ICE ban would restrict the supply options available for businesses and communities. ICE solutions will remain sole viable options for a long time, especially in industry and agriculture.

While we are already seeing some of these initiatives become a reality, the time for planning has passed, we need to act now.

#### Just Transition and influencing consumer behaviour

The biggest influence on achieving New Zealand's low carbon goals will be consumer behaviour. We must ensure those unable to afford EVs or lower emitting vehicles are not stigmatised and targeted by those who can. We must also provide them with options to enable them to contribute to carbon reduction in their own way (eg a lower emission vehicle than their current car, or education and support to have their vehicle serviced to mitigate any emissions deterioration from age and wear and tear).

If, as we project, there is a limited supply of EVs, then consumers will have no choice but to turn to penalty-incurring ICE vehicles. The penalties will subsequently increase the price of ICE vehicles in the market; if this further suppresses demand then many people will stay in their old, carbon-emitting, unsafe cars. They are also unable to switch currently to alternative forms of transport, such as public transport, because it is simply not there.

### MTA critique of ERP consultation

MTA agrees with the need to act and move to a low emissions future. However there have been several consultations on the same issues and little action by Government. The time for planning is over and we ne need to act now. Industry has told Government what is achievable, let's focus on realistic targets and pragmatic action.

The consultation document is very high level and vague. We need clarity and certainty on our next steps. There is no concrete detail in the proposals. Multiple parts of society have been asked for input, but there appears to be no discussion on how Government will synthesise and makes plans on that input.

Minister James Shaw has made numerous references for the Emissions Reduction Plan to be a "co-designed" process as did the consultation document. However, this high-level discussion document appears to be the last opportunity for engagement before the final release of the Emissions Reduction Plan in May 2022. Essentially, Government is "crowd sourcing" policy but not consulting on the results of this survey of a wide number of stakeholders. There is little to no mention of what New Zealanders can do now to reduce emissions.

#### **Consultation Questions**

1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not.

MTA supports the principles in *Te hau mārohi ki anamata*.

A fair, equitable and inclusive transition is non-negotiable; people who already experience social/economic disadvantages will be affected as will businesses in the transport sector. A *Just Transition* should also look at the potential impacts to New Zealand small-to-medium enterprises (SMEs). Businesses require a stable, predictable policy environment to enable investment in ways that deliver on the country's 2050 climate targets.

If the Government wishes to follow an evidence-based approach, it should do just that: base actions on evidence. Government should take note of industry knowledge and experience to ensure it adopts realistic and achievable goals. We are concerned about this being the only opportunity for engagement before the final release of the *Emissions Reduction Plan* in May 2022.

In addition to these principles, MTA supports the Climate Change Commission's recommendation of a principle relating to working in partnership with business.

# 2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable, and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

Businesses will likely have to do the heavy lifting; a true partnership between Government and Business is needed. SMEs will require a stable, predictable policy environment to enable investment in ways that deliver on the country's 2050 climate targets.

For example, New Zealand's service station sector faces a major financial barrier to investing in EV charging infrastructure. With the small number of EV's in the fleet now and no clear view on the size of the EV fleet past 2035, the sector may be reluctant to invest in charging facilities (assets that will need to provide ongoing value for more than 20 years).

If this is not addressed, the service station sector will risk being lumped with stranded assets and it will not be in a position to support the transition from predominantly fossils to low emissions fuels.

MTA has welcomed the announcements of Government plans to invest in broadening the EV charging network. This needs to include more than one or two providers and needs to look at convenient and accessible payment systems, rather than captive client account systems.

# 3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

New Zealanders want to know about what they can do to decrease their emissions **now**.

MTA believes an emissions testing regime for in-service vehicles in the existing fleet will ensure drivers are better educated about their emissions profile and impact of their vehicle.

In MTA-commissioned research, 75% of respondents did not know the level of their current car's  $CO_2$  emissions – 39% did not know where they would look for that information.

All vehicles (new and used) will (over time) operate at levels below their original manufactured specifications<sup>1</sup>. Being aware of their actual level of emissions is likely to impact consumer behaviour and guarantee reduction of carbon leakage.

The first use of emissions testing should be education. As time goes on, the Government might consider establishing an in-service emissions standard that triggers remedial actions when a breach is discovered at testing. Changes to the Vehicle Inspection Requirements Manual (VIRM) – the guidebook for vehicle inspections – could include the need for examination of exhaust systems to ensure catalytic converters or diesel particulate filters (DPFs) are present and operating normally.

# 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

MTA and other key industry associations have projected that the supply of EVs simply isn't there for Aotearoa to achieve the Government's targets. This means consumers looking to replace their current vehicle with a fresh import will have no choice but to turn to ICE vehicles that incur penalties under the Clean Car Standards element of the proposed clean vehicle legislation.

These import penalties will subsequently increase the price of ICE vehicles in the market; if this further suppresses demand for imported vehicles then many **people will stay in their old**, **carbon-emitting**, **unsafe cars for longer**. They will be unable to switch to alternative forms of transport, such as public transport, because it is simply not there.

The biggest influence on achieving New Zealand's low carbon goals will be consumer behaviour. We must ensure those unable to afford EVs or lower emitting vehicles are not stigmatised and targeted by those who can. We must also provide them with options to enable them to contribute to carbon reduction in their own way (eg a lower emission vehicle than their current car, or education and support to have their vehicle serviced to mitigate any emissions deterioration from age and wear and tear).

# MTA recommends deferring the implementation of the Clean Car Standard and augmentation of the demand side boost from the Clean Car Discount.

<sup>&</sup>lt;sup>1</sup> MTA research estimates that a vehicle that has travelled 150,000km may have degraded its emissions profile by around 45% from manufacture.

#### Equitable transitions strategy

MTA supports the objectives for an Equitable Transitions Strategy.

Multiple industries are experiencing a skills shortage; at time of writing New Zealand's unemployment rate sits at 3.4% - this is the lowest level on record.

Low unemployment rates coupled with record low immigration have made it near impossible for businesses to fill available roles during the pandemic. Additionally, disruptions in the education and training sector have not made things any easier on businesses.

New Zealand needs to look overseas and learn from their experiences; we need to urgently amend our immigration laws to support new technology transfer and adoption.

Government should focus on making public EV charging systems more accessible. There is currently very little ability for EV owners to charge at any public charging point. Public charging points have been built using 50% public funds. Currently, drivers must register with the corporate entity that owns the charging facility to be able to charge their EV.

Low-income households will likely not be able to afford clean cars for several years and used EVs do not match the range of an ICE vehicle. As EV batteries deteriorate, a new battery can be more expensive than the car it will be fitted into. Initiatives that boldly seek to place low-income families into used EVs may wind up placing a millstone around their necks.

The biggest influence on achieving the low carbon goals will be consumer behaviour. We must ensure those unable to afford EVs or lower emitting vehicles are not stigmatised and targeted by those who can. We must also provide them with options to enable them to contribute to carbon reduction in their own way (eg a lower emission vehicle than their current car, or education and support to have their vehicle serviced to mitigate any emissions deterioration from age and wear and tear).

#### Aligning systems and tools

MTA agrees that coordinated action is key to achieving New Zealand's emission targets. Aotearoa must look at all policy options, adopt all possible technologies, and influence all relevant actors (Government, business, and consumers).

In terms of funding and financing, MTA would like to see more accessible funding to support the investment in EV charging and Hydrogen refuelling across the existing service station network.

Research, science and innovation are crucial in helping us reduce emissions, especially in areas where Aotearoa is lagging.

MTA agrees that behaviour charge is central to New Zealand achieving its low carbon goals. Government needs to focus on increasing consumer demand behaviour through incentives and education. MTA's view is that the government should introduce an effective vehicle scrappage scheme to refresh the vehicle fleet to pragmatically substitute low emission vehicles for poor performing ICE vehicles. Newer cars are safer. Younger Used imports are safer. Importantly, for emissions policy, they are also cleaner.

A scrappage policy needs to be well-designed and considered in conjunction with in-fleet, age-appropriate emissions testing, and limits. It can be an effective approach<sup>2</sup> to support the uptake of more efficient vehicles (e.g. hybrid ICE/electric) and EVs.\_This aspect in its own right can be a viable effective incentive/disincentive lever for decarbonisation and safer travel.

MTA has collaborated with industry experts to start designing a scrappage scheme that works for Aotearoa. The preliminary output, which has more work to be done yet, can be found in Appendix I to this submission.

MTA supports moving New Zealand to a circular economy. MTA also understands that the Ministry is currently consulting on product stewardship regulations and Aotearoa's waste strategy. For further detail, please see MTA's submissions on those issues.

#### Transport

52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

**VKT reduction is the wrong measure.** MTA believes Government should look to measuring low emission vehicle uptake and public transport usage as markers of change.

The Government is trying to move New Zealanders to low emission vehicles (as well as changing the way we travel). As people move to these low emission vehicles, they will enjoy the benefits of lower cost operations and not necessarily reduce their VKT. The move to alternate vehicles is more likely to happen before the introduction of comprehensive public transport systems that reduce the amount of travel that people are doing in "cars" (however fuelled).

53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

#### MTA urges government to introduce more realistic targets.

To achieve the targets if current numbers followed trend, the number of EVs required is fantasy – this needs to be acknowledged.

Supply of zero emission is expected to remain scarce at least until 2025. Historically the supply of battery electric vehicles (BEV) to New Zealand has primarily been via the Japan used import sector.

<sup>&</sup>lt;sup>2</sup> <u>Global EV Outlook 2020 – Analysis - IEA</u>

- BEV sales in Japan are minimal, with typical annual volumes around 20,000 or so units, in an annual vehicle market of close to 4 million.
- The opportunity to significantly increase used import BEV volumes from Japan does not currently exist.
- In the past, New Zealand has taken approximately half of all used BEV exported from Japan.
- It is unrealistic to expect we will be able to do much better than that given growing interest from many other countries in Japan's zero emission stock.<sup>3</sup>

# 54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

MTA supports optimising freight routes, equipment, and vehicles to reduce emissions.

One of the biggest challenges will be addressing the market-led consumer demand for products which has driven suppliers and users of the freight system to an unsustainable model where goods are supplied just in time at the lowest price. While the just in time delivery process is critical for some food products, there are huge opportunities to improve efficiencies where non-perishables are concerned. These practices restrict opportunities for industry players to collaborate to offer more efficient and sustainable goods delivery models where businesses compete on the shelf rather than on the road<sup>4</sup>.

We support and see a role for biofuels and hydrogen fuels for future heavy vehicle fleets. However, the technology for green hydrogen is currently costly and is not widely available. The future of any green hydrogen production may in fact rest with other industrial developments and climate change actions, for example in agriculture, dairy, and energy.

MTA supports the move to battery electric heavy trucks. The building of heavy vehicle charging infrastructure would support longer term development of charging infrastructure for light vehicles. More financial support is needed to assist existing refuelling stations install EV charging to take advantage of existing infrastructure and services able to be accessed by EV drivers while they wait for batteries to be charged.

# 55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

MTA supports the introduction of the Biofuels Mandate (subject to appropriate consultation with industry about the implementation) and the use of alternative fuels, such as hydrogen, to help reduce the carbon emissions from the transport fleet.

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as

<sup>&</sup>lt;sup>3</sup> The MTA Submission to the Transport & Infrastructure Select Committee on the Clean Vehicles legislation has more information about why the UK market is not as viable a source for used EVs as some may think. <sup>4</sup> For more information, please see <u>https://www.smartfreightcentre.org/en/</u> and

<sup>&</sup>lt;u>https://www.sbc.org.nz/ data/assets/pdf file/0011/119783/Sustainable-procurement-guidelines-for-freight.pdf.</u> These two organisations have excellent resources to assist the freight sector be more fuel / emission efficient.

# early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

#### MTA does not support a time limit on light ICE vehicles entering the fleet.

Government must let the market take its course (with a finger only on one side of the scale, the demand side). As stated above, our view of impending supply constraints means that we feel it is unlikely we will achieve EV uptake targets by 2030. If we were stop importing all ICE vehicles from 2030, before we have been able to make a substantial impact on the composition of the fleet, then people will simply continue to use existing ICE vehicles and hold on to them longer. We should leverage improving ICE drivetrains technology for as long as possible.

Furthermore, any discussion of a ban on ICE vehicles whilst charging infrastructure is in its infancy and without a roadmap to mitigate homes without charging facilities is wishful and dangerous.

MTA believes measures to avoid Aotearoa becoming a dumping ground for high-emitting vehicles rejected by other countries are unnecessary. **We will not become a dumping ground**. New Zealand gets 95% of its used vehicles from Japan, these are mainly smaller, more fuel-efficient vehicles. If, as we propose, we focus on demand incentives and follow through with existing workstreams on introducing Euro 5 and Euro 6 standards, we will find ourselves more in line with overseas standards. Their "rubbish" will not be fit to enter New Zealand and nor will there be demand for it.

#### 57. Are there any other views you wish to share in relation to transport?

#### **Public transport**

As aforementioned, if low-emission vehicles remain unaffordable, and people hold on to their current vehicles longer, they will need suitable and convenient options for alternatives to vehicle use.

52% of respondents to a survey commissioned by MTA felt they did not have access to suitable and convenient public transport.<sup>5</sup>

This was more noticeable for the over-55 age group (63%) and for those living in Northland (71%), Nelson (75%), Taranaki (77%), Southland (83%), and the **West Coast (100%)**.

#### Energy strategy

The transport and energy sectors are becoming increasingly interconnected. As the number of EVs/PHEVs increases, there will be a close relationship between electricity markets and

<sup>&</sup>lt;sup>5</sup> Question: "If you cannot afford a low emission car, do you have access to suitable and convenient public transport?". Page **10** of **16** 

transport. To ensure Aotearoa's energy strategy is fit for the future both sectors must work together.

There is a real danger in treating each sector separately, Government must look at how impacts in the supply chain will affect various sectors.

# 58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

Government must pull all the levers to enable a successful and equitable transition of the energy system. MTA submitted on MBIE's biofuels consultation and is eagerly waiting for the Ministry's response. We want to ensure the industry can innovate and diversify in a way that New Zealand can leverage all available low emission technologies and work towards a low/no carbon future.

There needs to be additional support for low-income families. If Government wants to help low-income New Zealanders in purchasing low/zero emission vehicles their personal situation must be taken into account. These families are likely to be renting and will probably be unable to install charging equipment into their home.

MTA appreciates the opportunity to submit on transitioning to a low-emissions and climate resilient future.

| Phases of the<br>scrappage process  | Phase 1: Consumer<br>wants to scrap their<br>eligible vehicle  | Phase 2: Vehicle is<br>taken to collection<br>site to be scrapped   | Phase 3: Consumer<br>receives credit for<br>low emissions use  | Phase 4: The vehicle<br>is dismantled   | Phase 5: Dismantled<br>vehicle is recycled,<br>repurposed or<br>reused   |  |  |
|---|--|---|--|---|--|--|--|
| What does a<br>successful scheme<br>look like?                                  | Consumer: The scheme<br>incentivises behaviour<br>change and ensures<br>people take personal<br>responsibility for<br>understanding the role we<br>can all play with climate<br>change           | Consumer: It is easy for<br>consumers to drop off or<br>have their vehicle<br>collected<br>Vehicle collector; The<br>scheme ensures collectors<br>do not have to make<br>decisions regarding<br>vehicle eligibility         | Consumer: The scheme<br>gives options for low-<br>income New Zealanders to<br>spend in the way that best<br>suits them to enable<br>mobility<br>Dealer: The scheme should<br>be designed so vehicle<br>dealers are clear about<br>their role and what<br>vehicles they should<br>supply.<br>It should consider wider<br>fleet management<br>strategies (if any). | Dismantler/Recycler: The<br>dismantling & recycling<br>process remains profitable<br>under the scheme   | Dismantler/Recycler: The<br>car recycling industry<br>becomes a sustained<br>industry locally (i.e. within<br>NZ)  |  |  |
| What are the key<br>elements of a<br>scrappage scheme?                          | <ul> <li>Marketing &amp; education<br/>programme</li> <li>Clear eligibility criteria<br/>for vehicles to be<br/>scrapped</li> <li>Simple &amp; easy to use<br/>application process</li> </ul>    | <ul> <li>Accessible options for<br/>drop-off and collection<br/>Drop off areas for<br/>running vehicles</li> <li>An instant-access<br/>database collectors can<br/>access for verification</li> </ul>                       | Tailored options &<br>flexibility for low-income<br>New Zealanders   | <ul> <li>Clear criteria for vehicles<br/>that can be dismantled<br/>for parts vs totally<br/>scrapped, and/or parts<br/>that can be re-used vs<br/>parts that should be<br/>recycled</li> </ul> | <ul> <li>Strong connections to<br/>product stewardship<br/>schemes</li> <li>Visibility for the<br/>consumer of how parts<br/>from their vehicle have<br/>been treated</li> </ul>   |  |  |
| How can we make<br>the scheme simple &<br>easy for consumers<br>and businesses? | <ul> <li>Leverage existing<br/>touchpoints to promote<br/>the scheme and<br/>eligibility</li> <li>All the info about the<br/>consumers car should<br/>be captured in the back<br/>end</li> </ul> | <ul> <li>Online portal for<br/>booking collection/drop<br/>offs that fit around<br/>consumer schedules</li> <li>Collectors have the<br/>technology to verify<br/>vehicles on the spot at<br/>collection/drop-off</li> </ul> | <ul> <li>Consumer receives a card and/or app loaded with the credit that can be redeemed at accredited suppliers</li> <li>Govt. communicates early with dealers about the types of replacement vehicles that are eligible</li> </ul>   | A clear process for<br>vehicle ID and steps that<br>need to be taken to<br>break down the vehicle   | <ul> <li>Clear handovers to<br/>product stewardship<br/>entities</li> <li>Support to ensure 'pur<br/>scrappage' (i.e. turnin<br/>cars into haybales) ca<br/>become sustainable for<br/>businesses</li> <li>Online tool to for<br/>consumers to track pa</li> </ul> |  |  |

## Appendix I – draft output from MTA Scrappage Workshop



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**Fax** 0800 000 695 Email mta@mta.org.nz Website mta.org.nz Submission in response to "Transitioning to a low-emissions and climate – resilient future".

Reference to questions asked:

1. Too much racial segregation. We are one country and all sections of the community need to be considered, why this continual reference to Maori.

I don't think you should limit yourselves to nature- based solutions. Technological solutions for sequestering carbon exist and should be on the table even if they use fossil fuels to generate the energy, as long as it is a net decrease in carbon in the atmosphere.

- The government needs to fund the big projects to enable the output to be consumed domestically, things like Hydrogen at Tiwai Point, Biofuels at Marsden Point, and Atmospheric extraction of carbon using the South Island offshore gas reserves.
- 3. As above
- 4. We should not destroy rural communities by planting pine trees everywhere. Serious consideration should be given to planting natives so that sustainable logging of indigenous timber can be available for future generations.
- 5. I think the rapid increase in carbon prices that are being passed on to consumers is a travesty. It penalises the people who least can afford it as usual. Carbon should be kept at \$25 per tonne.
- 6. Get the heavy truck fleet onto NZ produced Green Hydrogen. Replace coal with gas at Huntly ASAP, certainly don't bring coal in from Indonesia when we have it in NZ, capture green house gasses at industrial sites. Subsidise retrofitting of double glazing for all buildings. Bio tech for cows to reduce methane. Waste sites need to capture methane and use it as an energy source. Forests, focus on natives.
- 7. Relying solely on moving away from fossil fuels. It is a great source of energy so let's not ban it, let's use it to power carbon reduction plants and use cleaner forms like gas.
- 8. 9,10,11,12 Again, racial segregation is a dangerous path to tread.
- 13. No, government needs to fund and build stuff, do something tangible to get the ball rolling.
- 14. A fund for the private sector to access to fund new technology that reduces our carbon footprint.
- 15. Too many cooks in this kitchen, just do it yourselves and keep it simple. It's not that hard, you don't have to do everything at once just pick the low hanging fruit first.
- 16. Better quality housing.
- 17. Pay them for 12 months of training in predetermined areas that have a skill shortage.
- 18. People that can get things done, organisation skills.
- 19. Offer viable low emission alternatives where appropriate, again Rome wasn't built in a day so keep it simple and small steps.

- 20. Get rid of too much bureaucracy, it slows things down. A small elite and focussed team.
- 21. None, spend time and money on doing not reporting.
- 22. Adoption of technology and increase in productivity, it flows from there.
- 23. Minimal bureaucracy.
- 24. High capital cost and surety of backing the right horse. Government needs to lead with dollars.
- 25. Don't know, what had everyone experienced would be a more pertinent question.
- 26. Do the simple and easy stuff first, increase gas supply and reduce coal, Green Hydrogen plant and Bio Fuels refining plant.
- 27. No
- 28. No and I don't want them because I believe they should be static at \$25 per tonne.
- 29. Who would know, 3 years ago it was \$50, now its \$65 and climbing. It is a complete nonsense and needs to be dealt to.
- 30. Yes
- 31. Consider rural communities and the need for them to have sustainable populations that are permanent in their area.
- 32. Forget the stick and get on producing some carrots.
- 33. Start planning the infrastructure projects.
- 34. Don't bother, let's get on producing Biofuel and we can still run around in cars. Human behaviour will then take care of the rest.
- 35. No
- 36. Not sure
- 37. I am not sure we need to create a whole range of new technology rather we should licence it where it will make a difference. Again stay focussed on the low hanging fruit.
- 38. Using the southern gas fields to power too complicated. Focus on NZ, if it ends up being exportable and or scalable later then that's a great result but not an imperative.
- 39. See 38.
- 40. Get focussed on doing not measuring as that can come later.
- 41. The companies that currently have the greatest exposure to climate change, i.e. the fossil fuel companies are the ones that will drive and implement innovation. That of course is dependent on the survival and ability to fund the change. So don't wreck them on the way through by ostracising them and certainly don't pull investment that is just naive.
- 42. Some sensible rhetoric as opposed to the nonsense coming out of COP26 and the like. What did that achieve, India and China are still burning coal and will do for years to come.
- 43. Common sense

- 44. No
- 45. Get early runs on the ball by starting to do the easy stuff first. Get Green Hydrogen going and rescue Marsden Point and get Bio Fuels going. Try and get technology fast tracked to sort out methane from cows through Biotech and not just NZ led.
- 46. Limited opportunities but enough to get us carbon neutral.
- 47. Yes
- 48. Start doing and let the rest catch up, prioritise what will reduce our emissions.
- 49. Bureaucracy and trying to be all things to all men.
- 50. Green Hydrogen and Biofuel, we have the capacity and it will make a difference quickly.

51. No

- 52. No, it is unlikely to work so don't waste your time.
- 53. No, from what I understand Volvo have said that the BE carbon point for an electric versus an internal combustion engine is 9 years. Promoting EV's is just going to make the climate position worse. Focus on heavy transport and getting some Biofuels produced to power the existing fleet. We haven't got enough power as it is!!
- 54. Yes but the actions should be Hydrogen and Biofuels.
- 55. No
- 56. No and never.
- 57. No
- 58. Don't throw the baby out with the bath water. Keep the infrastructure that is already in place and just burn green fuels through it.
- 59. Government investment in large green infrastructure projects.
- 60. Just get rid of coal, current levels of renewables are fine. Spend your money elsewhere.
- 61. I would develop the southern gas fields and use it to power the carbon sequestering plants. It's a great source of energy. The rest of the gas network should be left intact and migrate to Biofuels over time. No huge rush, just do it step by step and knock off Auckland and the upper NI, the rest doesn't really matter in terms of the carbon equation.
- 62. Remove coal where possible and replace it with gas.
- 63. Don't know
- 64. No, waste of time and resource.
- 65. I wouldn't bother, it is not making a difference. Get on and do something tangible.
- 66. No, see above.
- 67. No
- 68. Complete support, they should get stuck in and do it now. It needs to be NZ controlled.

- 69. No
- 70. Not now, we can't build enough as it is. Look to subsidise retrofitting double glazing.
- 71. Ask the building sector.
- 72. Don't waste your time, just go to Biofuels.
- 73. Just phase out coal, the rest can transition to Biofuels.
- 74. I wouldn't do it, save yourself another job.
- 75. I don't believe you should promote a segregated society, we are one nation.
- 76. Nothing
- 77. Probably but let the larger companies and economies engage in this research.
- 78. Not that I am aware of.
- 79. Equality
- 80. Ask the industry what they need and do that.
- 81. We can't ensure it will happen, some people don't care. Do the 80 and if the 20 follow they follow.
- 82. No
- 83. Biofuel and methane reduction
- 83 a. Same as the rest.
- 84. Just get on and do the infrastructure projects, farmers will make the change without the need to beat them with a stick, it's in their best interests.
- 85. Methane reduction.
- 86. You have got a long way to go before you go showing off. Don't bother with this one.
- 87. They'll do it themselves, it's called market driven.
- 88. No
- 89. Just capture the methane and use it, the more the better so no.
- 90. Yes where it is simple cheap and easy.
- 91. Offset the costs by capturing and selling the methane.
- 92. Starting to spread yourself to thin, get the low hanging fruit first.
- 93. Yes
- 94. Yes
- 95. In the larger cities.
- 96. Separation at source is easier.
- 97. No

- 98. Leave it until later.
- 99. Reduction of plastic especially around food packaging.
- 100 105. Don't know
- 106. No, there is enough forestry.
- 107. No see above, food is a better bet.
- 108. Involve the kids and schools.
- 109. Not sure.
- 110. Yes in this case I would.
- 111. Governments none, leave it to the private sector but stop inflating the carbon price, bring it back to \$25 per tonne.
- 112. Ask doc, they are the experts.
- 113. None
- 114. No

## EMISSIONS REDUCTION PLAN. SUBMITTER: R. Neil SUTHERLAND.

Auckland region. Individual submission. Permission to publish is granted.

The need to reduce carbon emissions is clear. The ERP has my support but needs more specific actions. However I believe:

- 1. NZ's targets are modest and insufficient to reach the stated emissions reduction target.
- 2. The plan does not sufficiently address the root cause of climate change
  - a) Our consumptive culture, our growth economy, ecological overshoot.
  - b) Methane emissions.

3. As a citizen of a rich nation, I don't like the ETS (if I understand it properly!!) as a way to trade our way out of the problem. Climate change is a problem of our making, and we must solve it from our own resources by reducing emissions rather than by getting credit for work in 'victim' countries.

The above three points will be the context for what I want to see in the Emissions Reduction Plan.

### TRANSPORT.

Additional comments:

+ Continue to incentivise purchase of EVs as a stop gap measure only because replacing fossil fueled vehicles with electric cannot be a permanent solution. EV's produce new problems of battery destruction, mining and car construction industries as themselves emissions producing. A target should be set to reduce car numbers.

- :: Car alternatives must be the dominant part of the plan.
- :: Electrify remaining parts of main trunk line by 2025

:: Introduce free public transport for buses and trains, immediately for children and students, then extend to others.

:: Extend cycle ways and foot paths, especially near schools.

:: Establish the Auckland Hamilton Tauranga rail link as a frequent, fast, attractive, and reliable passenger service.

:: Reinstate a full main trunk passenger service- Whangarei to Invercargil.

:: From 2025 shift the subsidy from EVs to e-bikes and public transport passes.

:: Cease urban motorway construction, and reduce the need for road construction by incentivizing sustainable housing developments e.g. Sun proposal.

:: Encourage higher density to reduce travel and roading.

+ Good to include clean coastal shopping and freight rail investment as a road freight/air freight alternative.

+ No mention of freight reduction. Use incentives to reduce the import of items obtainable in NZ. Many food articles (e.g. most supermarket biscuits) are imported) Incentive NZ production of them. Also reduce imports of other commodity lines which can also be produced locally from local products, thus reducing the international transport emissions.

+ Exempting RUC on heavy EVs is a good to go.

+ I question the huge emphasis upon EVs. What about hydrogen power?

+ Support anything that enables low income people to travel. They could be victims of the EV promotion.

### ENERGY.

+ Immediately begin an energy wastage consumer education campaign, and audit local body electricity wastage.

+ Timetable the total elimination coal, and stop coal extraction and import immediately.

+ End coal use in the public sector immediately (schools, hospitals etc) and reward industries/companies which use only sustainable energy.

+ Develop sustainable/circular economies to reduce energy consumption.

+ Stop new fossil fuel gas connections by 2025.

+ Immediately incentivize the installation of solar panels/ wind generators on private homes and extend the existing solar panel subsidy programs to equip all maraes, state houses, and where practical, public buildings.

+ Develop solar energy 'pools'- generation and storage- within communities.

+ End all fossil fuel energy production now.

+ Restrict/eliminate the import of high emission vehicles at theimporting company level. Restrict advertising if them so importer takes responsibility for the emitting product. This could extend to other high emitting products too.

WASTE. Waste reduction targets must be reviewed to remove landfill gases.

+ Continue to develop food waste reduction initiatives, including public education.

+ Ban all unnecessary plastic packaging to reduce landfill gases etc Implement a plastics surcharge for imported goods that are plastic wrapped.

FERTILISER AND METHANE. Sequestering carbon is the response of rich industries wanting to buy their way, in order to continue their polluting habits. It should not have a place in the plan as it side passes the emissions problem and doesn't reduce carbon/methane.

+ NZ must honour the agreement to reduce methane that it signed up to at COG 2021.

+ Import of palm kernel should be stopped immediately. It depletes rainforests in the producing country and its use allows for increased dairy herds.

+ Synthetic Nitrogen Fertiliser must be phased out by 2025. A soil restoration fund should be set up to transition farmers to more regenerative pasture management.

BIODIVERSITY. To sequester the carbon excess beyond our reduction levels:+ Set planting targets which recognize the superior carbon sequestering capacity of native forests against pine forestry.

+ DOC and local bodies should review policies on grass cutting and revert to meadow management rather than lawn. Require the inclusion of "meadow parks" in town planning.

+ Develop ocean restoration action that will enhance oceans while help sequester carbon e.g.restoring kina barrens to kelp bed sequestration areas.
+ Expand pest control projects which increase the sequestration potential of native fauna. + Protect existing wetlands and 'rewater' drained ones as carbon sinks.

+ Give urgency to shifting agriculture/horticulture etc towards regenerative practices by establishing measurable goals e.g. annual area of tillage, artificial fertilizer use levels, etc.

### TOURISM/IMMIGRATION.

- + Remove personal wealth as a criteria for immigration. The rich have the biggest carbon footprint.
- + Urgently develop a low emissions tourism policy, favouring low carbon footprint tourists and tourism enterprises.
- + Discourage cruise ships.

Thanks for this opportunity and for the good work that has been done so far. I hope there are inter party agreements on it, or else it will be subject to watering down as governments change. I hope we get it right!!

Neil Sutherland. 23/11/21



# NEW ZEALAND WINE

PURE DISCOVERY

### NEW ZEALAND WINEGROWERS SUBMISSION ON THE EMISSIONS REDUCTION PLAN CONSULTATION

#### Introduction

- New Zealand Winegrowers (NZW) provides strategic leadership for the wine industry and is the body that represents the interests of all of New Zealand's grape growers and wine makers. Established in 2002, NZW is funded by compulsory levies under the Commodity Levies Act and the Wine Act and has approximately 1,400 members. New Zealand is the only major wine producing country to have a single, unified industry body that represents both grape growers and winemakers.
- The wine industry (grape growing and winemaking) has generated premium goods exports of \$1.87 billion in the year ended June 2021, making it New Zealand's sixth largest export good.
- 3. NZW acknowledges the urgency for action to enable meaningful emissions reductions both in New Zealand and globally. We note the most recent report by the UN Environment Programme which states that new and updated Nationally Determined Contributions only take 7.5% off predicted 2030 emissions, while 55% is needed to meet the 1.5°C Paris goal. We have been encouraged by more ambitious targets committed to by leaders at COP26.
- 4. Net zero commitments require global emissions to roughly halve by 2030, this is now only eight years away. We note the recent update to New Zealand's target to bring emissions to 50% (previously 30%) below 2005 levels by 2030 and the crucial role all sectors (particularly agriculture) must play to achieve this.

- 5. Climate change is a key focus area of NZW's Environment Strategy and we have committed to our industry being carbon net-zero by 2050 (in line with the government target under the Paris Agreement). NZW has launched a suite of initiatives (detailed below) designed to progress action against our industry health indicators and longer term KPI relating to climate change.
- 6. NZW welcomes the opportunity to make a submission on the consultation document *Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future: Have your say and shape the emissions reduction plan.* NZW observes that the proposals and actions contained in the document are relatively broad and high level. Given the level of importance the ERP has for all New Zealander's, NZW strongly encourages a further round of consultation and engagement on specific policy proposals / the draft ERP before it is finalised.

#### Summary

- 7. Continued collaboration between government and the private sector will be fundamental to ensuring our climate goals are met. NZW considers government should support existing industry programmes (such as NZW's Sustainable Winegrowing programme detailed below) who have made considerable investment to assist members to adapt to climate change and reduce emissions. Such industry bodies are best placed to drive behaviour change within sectors, align financial and sustainability decisions and focus emission reduction priorities.
- 8. To enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy, NZW considers it is imperative that government policy both provides for and prioritises low emission activities. This will enable and incentivise the private sector to transition to low emission land uses. This is particularly important in the context of competing for scarce resources (such as water and productive land).
- 9. NZW's submission:
  - a. briefly summarises NZW's approach to sustainability, and its current initiatives and investment in relation to climate change; and

- b. comments on the key areas of the discussion document relevant to the New Zealand wine industry.
- 10. Rather than answer each of the questions individually, we have focused our comments on particular issues of the greatest relevance to the wine industry.

#### The New Zealand wine industry: Committed to sustainability

- 11. The New Zealand wine industry is committed to sustainability as it is essential that we protect the people and places that make our famous wines. NZW's Environment Strategy sets sustainability goals across six key focus areas: water, waste, pest and disease, soil, people and climate change. These objectives have been set in alignment with the United Nations sustainable development goals.
- 12. Sustainability has been part of our industry's DNA for decades. In 1995 NZW established our flagship sustainability certification programme: Sustainable Winegrowing New Zealand (SWNZ). Essentially, SWNZ sets out best agricultural practice for our industry. Members report information on their practices across the six different focus areas and this information is subject to independent audit every three years. To produce a SWNZ certified wine, all parts of the production chain must be sustainable (from grape to glass).
- 13. Today, 96% of New Zealand's vineyard producing area is SWNZ certified, with over 90% of wine production being processed in SWNZ accredited wineries and bottling plants. This level of certification at a national level is unprecedented across the globe and is a unique point of difference adding value to our product on the world stage.

#### Wine industry emissions profile

14. The wine industry is already a relatively low emission industry. In 2020, NZW worked with Toitu Envirocare (Toitū) to better understand our industry emissions profile. Toitū confirmed that winemaking was a relatively low emissions industry and returned a high value product. This work supports previous research conducted by the Productivity Commission in their Low Emissions Economy report (2018) which looked at tonnes of CO2 emitted per hectare of land across several industries. This data is presented in Figure 1 below.<sup>1</sup> A similar study in 2017 by Plant and Food Research found the per hectare carbon emissions of vineyards were the lowest of the NZ primary industries studied (roughly 50% lower than NZ kiwifruit and apples, even when shipping was considered).<sup>2</sup>



*Figure 1: Indicative yearly emissions per hectare from different land uses (Productivity Commission, 2018)* 

- 15. However, there is always room for improvement. As noted above, climate change is a key focus for NZW. Recently, NZW has launched a number of initiatives designed to progress action against climate change and assist our industry to reach its goal including improving measuring and reporting, and specific engagement with members on climate action.
- 16. NZW also participates in the He Waka Eke Noa industry/government partnership as an observer and frequently engages with MPI in relation to the 'Fit for a Better World' framework.

<sup>&</sup>lt;sup>1</sup> New Zealand Productivity Commission. (2018). Low-emissions economy: Final report. Figure 11-1,, page 303. Available from <u>www.productivity.govt.nz/low-emissions</u>.

<sup>&</sup>lt;sup>2</sup> Clothier et. Al. 2017. *Futures for New Zealand's arable and horticultural industries in relation to their land area, productivity, profitability, greenhouse gas emissions and mitigations.* New Zealand Institute for Plant & Food Research: Report prepared for New Zealand Agricultural Greenhouse Gas Research Centre. PFR SPTS No.14440.

#### Improving measuring and reporting

- 17. The past two years have seen significant investment in adapting our SWNZ programme to include a direct focus on climate change. The 2021 growing season was the first time that SWNZ members were required to report their key emissions as part of the programme. These include transport emissions up to the point of finished wine in tank, diesel use, total waste to landfill and vineyard fertiliser use. Furthermore, the 2021/22 growing season will be the first season SWNZ members have to report the total units of packaging as part of the information they submit to NZW.
- 18. While SWNZ is not a comprehensive carbon accounting system, it does provide us with guidance on key emission sources of relevance to our industry. This is not an end point. NZW is committed to using SWNZ to measure progress towards our 2050 goal. From 2022 the programme aims to capture key emissions from the production and packaging phase of our industry, which represents approximately 75%<sup>3</sup> of our industry emissions. Into the future, we hope to also capture emissions associated with freight and distribution.
- 19. Our strategy is to provide an industry standard for the collection of climate data. Any members wishing to use alternative calculators as well as the SWNZ programme are of course free to do so, however our focus is to ensure that the climate component of the SWNZ programme is tailored as well as possible for the wine industry. Collecting the data in this way enables us to take an industry-wide snapshot.

#### Engaging our members on climate action

- 20. We have partnered with Toitū Envirocare to enable us to give targeted emissions reduction advice to all our members regardless of their business size or available resources. This information is communicated through our well-established member engagement channels including Grape Days, Young Vit events, webinars and member-only website resources. Our work programme around climate education continues to ramp up as we increase our knowledge of the nature and scale of our emissions.
- 21. Our research with Toitū Envirocare is based on real winery and vineyard carbon inventories across the country and has given us further insight into the key emission sources of our industry. While winegrowing is not a major contributor to New Zealand's agricultural

<sup>3</sup> 

Toitū Envirocare, 2020. Emissions Reduction Guide for Vineyards and Wineries.

greenhouse gas emissions, we have identified that emissions from packaging, freight and purchased electricity are our industry's greatest contributers to climate change. These emissions are already captured in the ETS. The wine industry does not produce biological methane, while nitrous oxide (from fertiliser application) remains a relatively small contributor to our industry emissions. These insights enable NZW, through SWNZ, to focus its emissions reduction priorities appropriately.

22. In addition, in November 2021 we launched GHG emission report cards based on each member's carbon inventory reported through SWNZ. These individualised reports will help members to understand the size of different emissions sources and benchmark them against regional averages. This information will help our members align financial and sustainability decisions and help them to identify areas where targeted action on emissions will make the most difference.

#### Meeting the net-zero challenge

#### Transition pathway

- 23. NZW agrees that the ERP should be guided by a set of principles and generally supports the five proposed principles.
- 24. To enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy, NZW considers it is imperative that government policy both provides for and prioritises low emission activities. This will enable and incentivise the private sector to transition to low emission land uses. This is particularly important in the context of competing for scarce resources (such as water and productive land).
- 25. Through NZW's work with Toitū there is strong evidence that the wine industry is a low emission, high value industry. However, a key barrier to both the ongoing efficient operation and expansion of the industry is a lack of water security. While the wine industry is a relatively low user of water (compared to other agricultural uses) a secure supply of water is fundamental to both its continued operation and growth potential.
- 26. NZW understands the challenges our country faces with water quantity and quality and that we are dealing with a finite resource. In this context, policy decisions must be made, and

priority given to the best use of our precious resources in order to transition to a low emission and climate resilient future.

- 27. In addition to actions already committed to and proposed actions in this document, NZW considers that the following measures could further assist to help close the gap:
  - a. Recognition of vines and orchard crops that are not currently recognised (eg grape vines) under the ETS as a carbon sink.
  - b. Additional government support for research to better understand the carbon sequestration potential of soil in horticultural settings.

#### Helping sectors adapt

28. To help sectors adapt, NZW considers it will be important for the government to continue to engage with primary producers throughout the life of the ERP. Continued engagement and extension will ensure that industry has a clear understanding of what the ERP means for them now and into the future. The He Waka Eke Noa partnership provides a useful model for extension that could be utilised.

#### Aligning systems and tools

#### Government accountability and coordination

- 29. NZW agrees that government accountability and coordination will be important to ensure our targets are met. This includes not just a high level of cross-agency collaboration and coordination but also increased collaboration with businesses, sectors and industry organisations.
- 30. Increased government support of the work done by industry programmes, such as SWNZ, that have made (and continue to make) considerable investment to assist their members to adapt to climate change and focus emission reductions priorities is also important. NZW considers that industry bodies are often best placed to drive behaviour change, align financial and sustainability decisions and focus emission reduction priorities without adding significant cost or burdensome reporting requirements.

**Emissions Pricing** 

- 31. The majority of Scope 1, 2 and 3 emissions produced by the wine industry are nonagricultural GHGs priced under the ETS. NZW considers the current ETS works relatively well for the industry.
- 32. However, NZW is receiving an increasing number of comments and queries from members about recognising vegetation types not eligible under the ETS for sequestration value. There is a sense of growing frustration at the missed opportunity resulting from the ETS excluding many vegetation types from pricing systems. Several members are undertaking expensive regeneration activities on a voluntary basis, which we consider could be better recognized for the resulting benefits to climate.
- 33. NZW acknowledges that the He Waka Eke Noa draft pricing model for agriculture offers farms the ability to reward sequestration from on-farm vegetation, including vegetation that is not eligible for the ETS. NZW supports this approach, but considers regeneration could be better (and more fairly) incentivised through the broadening of inclusion of vegetation types in the ETS.

#### Planning

- 34. Decisions in relation to land use and resources will fundamentally affect the emissions pathway we take. The planning system will therefore play a crucial role in driving climate actions and enabling the transition to more climate resilient land uses.
- 35. As discussed earlier in this submission, NZW considers that it is essential that government policy / direction enables, provides for and prioritises low emission activities (particularly in relation to scarce and finite resources) in order to meet our climate goals. This position must be reflected in planning legislation and the hierarchy of planning documents. Climate goals to reduce emissions and support lower emission activities must also be considered in all associated planning decisions.

#### Research, science and innovation

36. NZW acknowledges the importance of research, science and innovation in adapting to climate change and reducing emissions. NZW owns its own research institution – Bragato Research Institute (BRI) that leads research, science and innovation to benefit the wine

industry and its key stakeholders. Climate change is a key driver of a number of programmes run by BRI with outcomes focused on developing greater resilience within the wine industry.

- 37. NZW considers that additional government support for the development of new and emerging technologies is necessary, however there is a risk that specific mechanisms for supporting the uptake of emerging technology will result in a "picking winners" approach, rather than providing support for the vibrancy of the market to prevail. Similarly, 'creating' (rather than supporting the organic development of) test beds, and pilot plant facilities does not have a strong track record of success and risks crowding out industry or private investment.
- 38. In addition, creating a "roadmap to guide investment in advanced technology" risks giving preference to certain preselected technologies over others. In a rapidly evolving field, that could be counterproductive, and lock in investment in areas that prove relatively less fruitful. As a small market, a significant technology challenge for New Zealand is identifying (existing) new or emerging technology applicable to New Zealand and then adapting it to New Zealand's specific conditions. Support in this area may bring more rapid results than a roadmap to guide investment.
- 39. It is also important to appreciate that solving complex challenges, such as waste, requires not just research to find technically viable solutions, but also development and commercialisation support to turn those research findings into economically viable tools that will be attractive to potential end users (often across a range of different sectors).

#### Transitioning key sectors

#### Transport

40. As discussed earlier in this submission, one of the key emission sources for our industry is from freight. Approximately 22% of the emissions profile of a bottle of wine is associated with transporting that bottle to market. Targeted effort to lower emissions from freight, in addition to pricing in the ETS, is required to meaningfully address this emission source. NZW supports efforts to reduce emissions from freight and associated actions. NZW considers that the investigation of mode-shift opportunities (ie rail, maritime) and the decarbonization of freight vehicles should be prioritised in the short term. Infrastructure investment now will also be crucial to transitioning the sector in the long term.

- 41. Lowering emissions from freight is important to meet climate change targets. However, it is also essential to recognise that the movement of goods and supplies is of vital importance to New Zealand. Policies and strategies to reduce emissions in this area must be carefully considered to ensure the supply chain is not hindered and productivity does not suffer. NZW considers it will be critically important to engage with industry (freight and the supply chain) as well as the energy sector to develop a strategy to lower emissions that is efficient and effective.
- 42. NZW acknowledges the importance of moving to zero emissions light vehicles and is generally supportive of this approach if there are viable and cost effective alternatives available. NZW has similar concerns to those raised in Business NZ submission relating to supply constraints which may compromise the cost effectiveness and uptake of low emission vehicles.

#### Agriculture

- 43. NZW is generally supportive of the government's proposals in relation to agriculture. However, given the importance of the sector to the economy, NZW considers that more investment should be made towards agricultural climate change research and on-farm emissions mitigations for both high emitting and low emitting activities. We agree with Business NZ's submission in this respect (paragraphs 130-133).
- 44. NZW emphasizes the importance of primary sector / government partnerships to achieve low emission food production. A collective and collaborative approach is vital to achieving climate goals and ensuring that the productivity and profitability of the primary sector is not unduly compromised.
- 45. As discussed above, NZW participates (as an observer) in the He Waka Eke Noa primary sector climate action partnership. NZW commends the progress made to date in the design of pricing mechanisms for agricultural emissions. Finding the balance between the implementation of behaviour shifting incentives while ensuring economic viability of the agricultural sector is complex and requires collective action, understanding and collaboration across the entire sector, as well as with the government. He Waka Eke Noa appears to be working well in the development of policy for agriculture and has significant buy-in from the sector. NZW encourages the government to consider utilising this type of partnership approach for other sectors to boost the speed of transition.

- 46. NZW is also a member of the Fit for a Better World Partnership Group and has initiatives underway across all relevant programme focus areas, including sustainability. This project is another example of successful and helpful collaboration and provides a further opportunity to capture progress and share successes on emissions reductions.
- 47. NZW recognises that "knowing your numbers" is an integral step to ultimately lowering emissions on a sector wide and individual farm basis. As noted above, NZW has a dedicated programme of work focused on understanding and managing our industry emissions. The programme aims to support members to understand the size of different emission sources (ie "know their number") in order to identify areas for improvement. NZW considers that industry and businesses are best placed to develop their own methods and solutions to capture and report data relevant to their industry. Additional support from government (eg funding, sharing resources etc) for industry organisations and programmes (such as SWNZ) would help to continue to enhance data capture and drive behaviour change without additional and burdensome reporting requirements.
- 48. NZW again wishes to emphasize that it considers that to effectively reduce emissions in the agriculture sector and promote land use change to lower emission activities, policies and strategies must:
  - Take account of those industries (such as winemaking) that already use resources efficiently. Efficient use of resources should be incentivised for all, but any measures taken should not penalise early movers and those that already operate efficiently; and
  - Low emission land uses must be enabled and prioritised to encourage and incentivise land use change to low emission sectors.

#### Waste

49. Along with climate change, waste is a key focus area of NZW's Environment Strategy. Our industry goal in relation to waste is to minimise the environmental impact of the materials our industry use. To achieve this, NZW has established an industry working group on waste minimisation through the Sustainability Guardians initiative, to encourage innovation and peer-to-peer learnings on the subject. NZW will be making a comprehensive submission on the separate waste consultation process.
50. NZW supports the long term goal of diverting organic waste from ending up at landfill. However, NZW does not support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030. Before such a proposal could be contemplated there needs to be sufficient infrastructure and costeffective viable processing alternatives available to ensure that this type of waste can be disposed of (ie recycled, re-used or composted) appropriately and without unintended consequences. New or emerging technologies will play an important role in this area. We would expect a clear strategy and further consultation to occur before any decisions are made. NZW does not support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas for the same reasons.

#### Conclusion

51. Thank you for the opportunity to provide our input into the consultation on the ERP. We look forward to further engagement and are happy to provide any further information.



General Manager Sustainability New Zealand Winegrowers



24 November 2021

#### NZCER submission on the Emissions Reduction Plan (ERP)

This submission has been compiled by a team at the New Zealand Council for Educational Research (NZCER). Established in 1934, NZCER is Aotearoa New Zealand's independent research and development organisation, operating under its own legislation since 1945. NZCER's current strategic priorities include decolonising education, upholding mana Māori, whakamana Māori, improving equity for ākonga and equity in education, and influencing the future of education. As a research and development organisation, we are committed to honouring Te Tiriti o Waitangi. We value the importance of Māori language, culture, and identity in all our practices.

#### 1. Our key messages

- 1.1. The education sector needs to see itself clearly in the ERP.
- 1.2. Education's contribution to climate transition is often overlooked.
- 1.3. Aotearoa New Zealand needs a comprehensive education sector strategy for climate change and sustainability.
- 1.4. With Government support, education settings are ideal sites for normalising lowemissions practices.
- 1.5. With Government support, education settings can support the realisation of the guiding principles for the transition.
- 1.6. **Our key recommendation for the ERP** is to include a clear statement about the role and contribution of the education sector, as a whole, to New Zealand's climate response and a just transition to a zero-carbon future. This should be supported by the development of a comprehensive strategy and action plan for education co-designed with the education sector.

#### 2. Introduction

2.1. NZCER recognises the significant and imminent threat that climate change poses to the lives and wellbeing of people in Aotearoa, in the Pacific, and globally. With little time left to reverse the current trajectory and keep global temperature rise below +1.5°C, climate action is more urgent than ever. In response, NZCER supports a just transition to a low-emissions zero-carbon economy in Aotearoa New Zealand.

- 2.2. As acknowledged in the Discussion document, the government's Emissions Reduction Plan is incomplete and requires input and feedback. We welcome the opportunity to contribute - in particular, to strengthen the limited attention given to the contribution that the education sector can make to emissions reduction, and a just transition to a zero-carbon future.
- 2.3. Our key recommendation for the Emissions Reduction Plan is to include a clear statement about the role and contribution of the education sector, as a whole, to New Zealand's climate response and a just transition to a zero-carbon future. Our expectation is that the education sector, including education unions, educational institutions, teachers and school leaders, and learners of all ages, will be engaged in the process of social dialogue and co-design of strategies and actions for an urgent, ambitious, just and inclusive transition to a zero-carbon future.

#### 3. The education sector needs to see itself clearly in the ERP

- 3.1. Education does not have its own section in the ERP discussion document. However, education is mentioned 25 times, and the need for New Zealanders to develop and acquire new skills is mentioned 18 times. The words learning and training each appear 3 times. Schools are mentioned 13 times, but tertiary education is not discussed at all.
- 3.2. It is important that the education sector can see itself clearly represented in the final Emissions Reduction Plan, and in other government plans for Aotearoa New Zealand's just transition to a low-emissions, climate-changed future. The transition to a low-emissions future is not just a scientific, economic, and technological transition. It is also a major social and cultural transition, and education can play a central role.

#### 4. Education's contribution to climate transition is often overlooked

4.1. The UN Framework Convention on Climate Change clearly signals that education has a key role in climate transition, "enabling society to be part of the solution".<sup>1</sup> New Zealand and international research shows that there is often a disconnect between climate policy and education policy.<sup>2</sup> Consequently, education sector policies in most countries – including New Zealand - are currently inadequate to

<sup>&</sup>lt;sup>1</sup> See Article 6 of UNFCC, <u>Education and Training under Article 6 | UNFCCC</u>

<sup>&</sup>lt;sup>2</sup> See Bieler, A., Haluza-Delay, R., Dale, A., & McKenzie, M. (2017). A national overview of climate change education policy: Policy coherence between subnational climate and education policies in Canada (K-12). *Journal of Education for Sustainable Development*, *11*(2), 63–85.

support and enable the powerful potential role of education to be realised as a key lever for climate mitigation, adaptation, and just transition.<sup>3</sup>

- 4.2. However, the needle is beginning to shift. At COP26, some countries' Ministers of Education made significant pledges and commitments on climate change education. UK's Secretary of State for Education announced a draft education strategy<sup>4</sup> for sustainability and climate change. Stating that "education is critical to fighting climate change" (p.4), the draft strategy includes a vision that, "The United Kingdom is the world-leading education sector in sustainability and climate change by 2030", and maps out a "whole-system approach" to achieving this, including commitments around resources and training for teachers, support for green skills and careers, emissions-reduction and adaptation in school buildings and properties, sustainable operations and supply chains, and leadership opportunities for learners.
- 4.3. Italy's Ministers of Education and Ecological Transition also spoke at COP26 about the crucial role of education, linking climate education to the core values of peace, democracy, and collaboration, and calling for transformational approaches. As the Italian Minister expressed it, *"We have to transform our schools, and to consider that we have the opportunity to start from environmental crisis and climate crisis to build up a new world starting from the school".*
- 4.4. Ministers from other countries also made various pledges and commitments on education, including Finland, Sri Lanka, Andorra, Cameroon, Spain, Nicaragua, Greece, Scotland, Malawi, Colombia, Japan, The Commonwealth, North Macedonia, Jersey, Sierra Leone, Gibraltar, Korea, Armenia. New Zealand was not among the countries that made education pledges at COP26.
- 4.5. Education unions across the world have mobilised around commitments to climate change education and education for sustainable development in the Paris Agreement (article 12) and the 2030 Agenda for Sustainable Development (targets 4.7, 12.8 and 13.3). Educators in the Asia-Pacific have jointly called for an urgent commitment from all governments to provide quality climate change education.<sup>5</sup>

## 5. Aotearoa New Zealand needs a comprehensive education sector strategy for climate change and sustainability

5.1. Aotearoa New Zealand currently lacks a comprehensive education sector strategy for climate change. Such a strategy would include clear goals and actions for

<sup>&</sup>lt;sup>3</sup> See Marcia McKenzie (2021) Climate change education and communication in global review: tracking progress through national submissions to the UNFCCC Secretariat, *Environmental Education Research*, 27:5, 631-651, DOI: <u>10.1080/13504622.2021.1903838</u>

<sup>&</sup>lt;sup>4</sup> https://www.gov.uk/government/news/education-secretary-puts-climate-change-at-the-heart-of-education--2

<sup>&</sup>lt;sup>5</sup> See https://www.ei-ie.org/en/item/25410:educators-in-asia-pacific-call-for-an-urgent-commitment-toquality-climate-change-education

emissions reduction. More than this, it would address the holistic educational needs of all learners in Aotearoa New Zealand (at any age or stage of life) in a just transition to a low-emissions, climate-changed future.

- 5.2. The ERP talks about "behaviour change and empowering action", but alongside strategies to support "the public" to make changes, New Zealand needs a comprehensive education strategy that supports learners of all ages to deepen and extend their knowledge, skills, and capabilities needed for the transition.
- 5.3. In Aotearoa, education for transitions to a safe climate future must be underpinned by a commitment to genuine Tiriti partnerships in which mana whenua exercise their right to kaitiakitanga.
- 5.4. A comprehensive education sector strategy must recognise and address specific educational equity issues that could work against the goals of an equitable, fair, and just transition. The Climate Change Commission's report<sup>6</sup> states that *"the Government needs to address existing barriers resulting from historical injustices, for example, Māori experience persisting inequalities in education and skill levels, influenced by the cumulative effects of colonisation and structural systems that advantage non-Māori" (p.332).* The report identifies the need to address these inequities in partnership with Māori: *"Education and training developed by Māori, for Māori, will be important for reducing existing inequities" (p.160)*
- 5.5. Other equity issues must be recognised and addressed in a comprehensive education sector strategy to support a just transition:
  - 5.5.1. Climate education in Aotearoa must recognise and respond to the severe impacts of climate change on Pacific nations and for Pacific peoples, and recognise the existing educational and employment inequities and impacts of climate change for Pacific peoples.
  - 5.5.2. Climate education in Aotearoa must recognise the existing educational and employment inequities and impacts of climate change for disabled people.
  - 5.5.3. Climate education in Aotearoa must recognise that children and young people and future generations have contributed the least to the climate crisis and will carry the heaviest burden. Education must work against conventional practices and structures that limit children's and young people's rights to participate in decision-making that affects them and their futures.
- 5.6. A just transition is necessary for workers in jobs and industries that will be highly affected by the shift to a low-emissions future, and their whānau and communities. Access to high-quality, locally-accessible lifelong learning and tertiary education is critical to support working people to develop new skills and capabilities for the future of work in a low-emissions economy.

<sup>&</sup>lt;sup>6</sup> New Zealand Government (2021). *Ināia tonu nei: a low emissions future for Aotearoa Advice to the New Zealand Government on its first three emissions budgets and direction for its emissions reduction plan 2022 – 2025*. Wellington.

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- 5.7. An education strategy for a climate-changed, zero-carbon future must support active engagement in solutions-focussed, civically engaged, children and youth-centred approaches to climate transitions.
- 5.8. Quality climate change education will support the empowerment of local communities to collaborate to develop localised solutions and safe, healthy, climate-resilient, low-carbon communities, towns, and cities.
- 5.9. Education for a climate-changed, zero-carbon future is critical to the future stability of Aotearoa as an effective and peaceful democracy, in a future where we will increasingly need to find peaceful solutions to conflicts arising from climate change.
- 5.10. These skills need to be learned and practised in formal and informal education spaces. Educational environments should model positive climate action, nurture hope, and help rangatahi to be emotionally resilient as they work towards a just transition. Understanding the emotional aspects of climate change and the different ways in which people respond to complexity, uncertainty, and change/transition is key, as it drives willingness to engage in action, for people of all ages and stages of life.

## 6. Education settings are ideal sites for normalising low-emissions practices

- 6.1. Education settings are ideal sites for implementing and normalising emissionsreducing actions and activities that model the "new normal" for a low-emissions Aotearoa New Zealand. Some education settings already engage in emissionsreducing practices that cut across most, if not all, of the areas covered in the ERP discussion document (transport, energy, waste, afforestation). However, education settings are often constrained in the extent to which they are able to reduce their own carbon emissions. They need systemic changes, and systemic supports, to achieve their goals and ambitions for decarbonisation.
- 6.2. Our research<sup>7</sup> shows that while students, teachers, and school leaders are generally concerned about climate change and want to do something about it, often, where fantastic things are happening on the ground, it is because of the vision and commitment of passionate teachers, school leaders, students, and their communities who chose to make this a focus. It is not systemic. Teachers, school leaders, and students have identified a lack of "top-down" direction and leadership

 <sup>&</sup>lt;sup>7</sup> See Bolstad, R. (2020a), Climate change and sustainability in primary and intermediate schools: Findings from the 2019 NZCER national survey of English-medium schools. New Zealand Council for Educational Research.; Bolstad, R. (2020b). Opportunities for education in a changing climate: Themes from key informant interviews. New Zealand Council for Educational Research. <u>http://dx.doi.org/10.18296/rep.0006</u>; Bolstad, R. (2020c). Climate change and sustainability in secondary schools: Findings from a 2020 survey of English-medium secondary and composite schools. New Zealand Council for Educational Research. <u>http://dx.doi.org/10.18296/rep.0006</u>; Bolstad, R. (2020c). Climate change and sustainability in secondary schools: Findings from a 2020 survey of English-medium secondary and composite schools. New Zealand Council for Educational Research. <u>http://dx.doi.org/10.18296/rep.0006</u>

to signal that climate change, and effective responses to climate change, are a priority for the education sector.

6.3. Education settings are ideal settings for building learners' and communities' understanding of, and ability to participate in, circular systems. The education sector is also crucial to supporting research and innovation that is critical for supporting Aotearoa New Zealand and its people to thrive in a zero-emissions, yet climate-changed, future.

## 7. Education settings can support the realisation of the guiding principles for the transition

- 7.1. Education settings can support learners of all ages to engage with, and understand the principles the Government has set out to guide the transition:
  - A fair, equitable, and inclusive transition
  - An evidence-based approach
  - Environmental and social benefits beyond emissions reduction
  - Upholding Te Tiriti o Waitangi
  - A clear, ambitious and [achievable]<sup>8</sup> path
- 7.2. Education settings can model these principles in practice through learning and codesign with learners, educators, and communities. Education can play a role in supporting learners and communities to understand how Tiriti principles and obligations can be upheld as Aotearoa New Zealand transitions to a low-emissions future, and unpack the relationships between climate change and colonisation.
- 7.3. Education can also support deeper engagement with indigenous knowledge systems and mātauranga Māori, and help learners to understand why supporting indigenous peoples' rights and self-determination is part of climate justice. Our research suggests that these dimensions are currently underdeveloped in current approaches to climate change education.<sup>9</sup> Support for teachers, including initial teacher education and in-service professional learning and development, will be an important part of a comprehensive education strategy.
- 7.4. There are significant opportunities to strengthen and connect climate education and just transition to the current refresh of the New Zealand Curriculum, including linkages with the new Aotearoa New Zealand's histories curriculum and the overarching goal of a curriculum that is bicultural, inclusive, and easy to use.
- 7.5. Comprehensive and strategic investment from the Ministry of Education and the Tertiary Education Commission is needed to support education settings to put these principles into practice.

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<sup>&</sup>lt;sup>8</sup> We recommend using the word "achievable" rather than affordable.

<sup>&</sup>lt;sup>9</sup> See footnote 7.

#### 8. Conclusion

- 8.1. The climate crisis is the greatest threat facing humanity and our planet. Education must be transformed to catalyse the fight against climate change and to support a just transition to a more sustainable world. Those most affected by climate change particularly iwi Māori and Pacific Islands people's communities must have a seat at the table. Children and young people must be involved in the decisions and actions that will shape their futures.
- 8.2. The education sector can and should play a central role in Aotearoa New Zealand's climate response. NZCER supports bold and ambitious action for a just transition to a zero-carbon future that engages the education sector, learners of all ages, communities, and working people as co-designers and decision-makers in plans to reduce New Zealand's carbon emissions.

About NZCER's climate change research: *Educational policy and practice for a changing climate: What are the options?* 

Our research project explores what changes or adaptations our education system may need to make in response to climate change. We publish research reports, articles and blogs.

Connect with the project and access all reports and project outputs here:

https://www.nzcer.org.nz/research/climate-change

## **Emissions Reduction Submission**

# New Zealand Demolition and Asbestos Association

## November 2021



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### Foreword – New Zealand Demolition and Asbestos Association Emissions Reduction Submission

The New Zealand Demolition and Asbestos Association (NZDAA) is proud to submit this response to the emissions reduction plan (the plan).

Our Association and our members integrate the following activities within Aotearoa:

- Hazardous material management and remediation
- Demolition and decommissioning
- Salvage operations
- Source and co-mingling separation
- Waste Collection
- Waste Transportation
- Waste Treatment & Recycling
- Waste disposal
- Health and Environmental Surveillance
- Inspection and Assessment
- Training
- Equipment hire
- Labour hire
- Health and safety equipment suppliers
- IANZ laboratories

This submission represents the collective views of the members of NZDAA, a group of around 80 businesses who contribute \$600M annually to Aotearoa's GDP and whom are committed to reducing our net emissions in a progressive, responsible and reasonable manner to zero by 2050.

Our Industry and our professional members, through the very nature of their varied operations, utilise plant and equipment and conduct undertakings that are high GHGemitting activities. These include excavators, skidsteers, forklifts, elevated work platforms, cranes, generators. We also recognise **the** pivotal position that our services provide to the capability of the Aotearoa construction Industry to function effectively and efficiently. Therefore it is pertinent that we express our position as an entire Industry on this critical and important subject.

The linear mind-set is **no longer** socially, environmentally and economically acceptable to the majority of our community – our global natural resources and our environment are not infinite and must be treated as Taonga and we must all act as Kaitiaki not consumers for future generations to come.

This is our resolute position as an Industry and has been for many years.

**Emissions Reduction Submission** 

Our submission asks our Government to continue to prioritise greenhouse gas (GHG) emission reductions and to work in partnership with Aotearoa business, industries and communities to realise the targets.

Climate change threatens all New Zealanders – now and into our future. The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) states that humans have unequivocally caused global warming that is causing widespread and rapid changes to our planet. To achieve New Zealand's commitment to limiting global average temperature rise to 1.5°C above pre-industrial levels, our communities, our businesses and our Government must walk hand in hand.

Today's decisions will impact our future and future generations. Any approach to reducing carbon emissions will affect people's lives and livelihoods. For this reason, we would like to work with the Government to ensure that the steps that need to be taken are balanced and sensible. With this in mind, our Association submit our feedback based on the following targeted areas:

- 1. Transport
- 2. Building and Construction

We are confident that by working together, we can bend the emissions curve over the next four years and put us on track to reach net-zero emissions by 2050 as per the Zero Carbon Act 2019 and make this vision a reality.

Submission Date: 24<sup>th</sup> November 2021.

Vice President

### President

### **Executive summary**

This submission by the New Zealand Demolition and Asbestos Association (NZDAA) represents the combined view of our 80 member companies for the Climate Change Commission's first climate budget 2022 to 2035.

Our NZDAA members, leaders in their own right, are already taking individual steps to transition to a net-zero future. As an Industry and Association, we want to translate this to collective action.

That includes members investment in high value, low carbon heavy machinery, equipment and vehicles. They are transitioning into designed fuel efficient or hybrid and full electrical models. They are keenly aware of international efficiency standards and the benefits of energy use reduction technology, and this guides their purchasing decisions. They are adjusting their own behaviours and work practices to actively reduce their fuel use and decrease emissions.

It is vitally important that the Government acknowledge and support these early movers, and by doing so, encourage the rest of heavy construction Industry to transition.

We understand that the emission budgets set a collective and progressive limit on the amount of greenhouse gas emissions allowed across a predictive period. The reductions required must also be technologically achievable, economically viable and socially acceptable.

The NZDAA welcomes the work of all parties in producing the emissions reduction plan. We are broadly in agreement with the direction of plan and the vision it sets out for the staged path to 2050. We believe it represents an achievable transition pathway that our country can get behind.

The main drivers for our Industry based submission are:

- Decarbonisation net-zero emissions by 2050 to meet our industries climate change mitigation obligations as not only part of a global plan to prevent the worst impacts of climate change for future generations
- **Resilience** we are an Industry built on change and adaptation. As design and construction evolves, our Industry and our members must be able to continue to provide timely and quality inspection, assessment, recovery, and remediation activities that progressively reduce to net-zero our emissions for our activities.
- **Productivity and innovation** our Industry has always been at the forefront of adoption of new technologies. It is the NZDAA's intent is that our members, and the wider Industry can have equitable access to these technologies, methods, skilled labour while ensuring the health, safety and wellbeing of our larger community thrives
- Wellbeing to empower our Industry, members and our workforce to make business, behavioural and lifestyle changes that provide positive emission reduction impacts that are technology-based, risk and future-focused

Our Industry is one where capital costs are focussed and upfront, which increases investment risk and conservatism. We also operate with low profit margins in a very competitive market. Due to significant capital injection that may be required, without sufficient Government support, it is unlikely that all our operators would be able to reasonably and justifiably meet emission targets.

Considering our Industry limitations and our desire to meet our obligations, the NZDAA's nine significant recommendations are:

- 1. Incentivise investment in low-emission (minimum Tier 4), hybrid and electric on-road trucks and nonroad equipment to encourage operators and business to upgrade their existing, aging fleet and reduce upfront costs,
- 2. Support the biodiesel Industry allowing this fuel alternative to become commercially viable through a biofuels mandate, which will be a targeted progressive approach to allow sufficient time for biofuel infrastructure, reduced pump pricing and supply to fully develop,
- 3. Include low or zero emission standards and equipment use in the weighted attributes evaluation process as part of the Government's procurement process and reduce the heavy weighting accorded to price,
- 4. Adopt the Environmental Protection Agency's Tier 4 Emission standards for all nonroad heavy construction equipment with a phased implementation period before progressing to further reductions by adopting EU Stage V or EPA Tier 5 emission standards – any further reductions that do not align with existing international standards will meet resistance from equipment manufacturers,
- 5. Developing and introducing low carbon fuel standards that cover a wide range of alternatives including for example biofuels and hydrogen,
- 6. Progressively eliminating fossil fuel subsidies and direct these funds towards GHG lowering initiatives,
- 7. Introduce a tiered road user charges (RUC) system to recognise those HV and MV operators that use alternative low carbon fuels and Tier 4 or higher fuel efficient vehicles,
- 8. The Green Investment Fund application process be streamlined and assistance given to *"Kiwi Mum and Dad"* businesses (small to medium enterprises) to allow for them to apply for funding.
- Require all construction projects with an overall project value of \$1M or more to install or have available for installation, single and 3 phase temporary builders supplies from the start of the project

We look forward to working in partnership with Government to bend Aotearoa's emissions curve and to give our country and our businesses a pathway forward to reaching net-zero emissions by 2050.



## Emissions budgets and plans to meet them

Our national challenge

Figure 1: Ministry of Transport Green Freight Working Paper - New Zealand's Greenhouse Gas Inventory 1990 – 2017

We believe that Aotearoa is in a unique position to show the world how to decarbonise in a relatively short timeframe. Our belief is based on the understanding of the significant renewable portion of our electricity grid. This also presents opportunities to export our knowledge to the rest of the world and become true global leaders, amplified by the ambitious announcements from COP26.

We also understand that the emission budgets are intended to provide greater predictability for all those affected, including households, businesses, and investors, by giving advance information on the emissions reductions and removals that will be required.

The budgets will not, in and of themselves, reduce emissions. It is through implementing this plan in a partnership between Government, business, our communities, and New Zealanders that we will drive emissions reductions in Aotearoa.

Private sector leadership and action is absolutely vital for Aotearoa to meet its emissions obligations and targets. We are pleased Government acknowledges the critical role that businesses will play in helping Aotearoa reach its net-zero emissions goal. We do not see Aotearoa's emissions reduction targets as solely the Government's targets, rather they guide a partnership between Government and all of our community who will need to commit capital, take risks, and change behaviours in order to achieve them.

#### Our approach to this submission

We have focused our submission on our ambition of a Aotearoa with:

- A. A society that is fair, inclusive, and diverse.
- B. An economy that is:
- open, recognising Aotearoa's role as a trading nation.
- globally connected, virtually and physically.
- supported by market regulation that is incentive focused, intervention cautious.
- transitioning towards a sustainable circular economy that recognises the limitations of natural resources
- C. A climate change response comprising:
- science-based mitigation with effective measuring and reporting of emissions.
- adaptation efforts that are technology-based, risk- and future-focused.
- a just tr<mark>ansition that</mark> is fair, equitable, and inclusive for all New Zealanders.
- D. Our Association acknowledge the Rangatiratanga status of Māori as Treaty Partners and that mātauranga Māori makes an important contribution to solving policy, procedural and practical problems.
- We are pleased that the proposed emissions reduction plans will be designed to not disproportionately affect Māori and other minorities and will support their expectations and aspirations. It is noted that the Demolition and Asbestos Industries in Aotearoa have a 43% Māori representation.

We have also considered the following specific principles in preparing this submission:

- Our Industry holds the belief that waste reduction, GHG emissions reductions and recycling and reuse intensification are intrinsically entwined and are all possible benefits from industries that work collectively with Government with priced and non-priced policies that incentivise innovation.
- We support the emissions reduction targets and purpose of the Act to contribute to the global efforts under the Paris Agreement to limit warming to well below 2 degrees above pre-industrial levels and pursue efforts to keep temperature warming of 1.5 degrees within reach.
- The NZDAA is currently working with operators to fully understand our industries our emission units to calculate our GHG emissions directly related to our activities.

#### Overarching considerations

Our Industry is one where capital costs are focussed and upfront, which increases investment risk and conservatism. We also operate with low profit margins in a very competitive market. Due to significant capital injection that may be required, without sufficient Government support, it is unlikely that all our operators would be able to reasonably and justifiably meet emission targets.

We utilise primarily non-renewable diesel plant and equipment and conduct undertakings that are high GHG-emitting activities. These include excavators, skidsteers, forklifts, elevated work platforms, cranes, generators.

The average excavator, depending on the tool, age, size, use, torque and operator behaviour can use up to 150 litres of diesel (or emits 402kg of GHG) per day – there are over 300 such machines spread across our operators. The average concrete crushing machine with the same variables can use up to 200lts (or 536kg of GHG) daily. For specialist equipment such as high reach and ultra-high reach equipment, fuel consumption is eye-wateringly greater.

Several of our operators are already leading the way and taken exceptional risks in being the first to invest in green technologies; in their recycling methods; upgrading their fleets, and switching to fuel efficient and hybrid / electrical options. It is vitally important that the Government acknowledge and support these early movers, and by doing so, encourage the rest of heavy construction Industry to transition.

#### Projected work<mark>load and pre</mark>ssure from demand

The demolition and hazardous material remediation Industry is set to face increasing demand as predicted Government and private sector initiatives in housing, and infrastructure materialise. This does not factor in the proposed decommissioning of oil and gas facilities and Tiwai Point.

While our Association intends to face these upcoming challenges head on, we require Government support to ensure that existing and new operators in our Industry can reasonably conduct their business in a manner that reduces GHG emissions in their activities without intervention.

#### Mobilising capital

There is an important role of Government in supporting businesses to bridge the gap between activity that is greenhouse gas (GHG) emitting and equivalent activity that reduces GHG emissions by monetising the value of the emission reduction outcomes.

Decarbonisation requires **significant** investment and there is an opportunity to introduce a range of practical, targeted and effective measures that support and influence businesses to advance carbon reduction initiatives and investment.

#### Supporting innovation and future infrastructure

To ensure Aotearoa can capitalise on the full potential of emerging technologies it will be critical for Government and Industry to work together to ensure we are building the skills and innovation capabilities within Aotearoa, and that the rollout of supporting infrastructure to enable innovation can continue at pace. There are specific roles technology and innovation play in enabling our Industry's climate change adaptation and mitigation.

#### Industry training initiatives

The NZDAA is currently finalising the development of a set of recognised national training standards and certificates for demolition where emission reduction techniques, recycling, recycling practices and opportunity recognition standards are incorporated into the qualification to give cadets a robust and rounded background in the future of demolition practices and where the Association, our Industry, and society, see, expect, and demand demolition and recycling practices to sit.

These qualifications are set to roll out early 2022.

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#### NZDAA Guidance Notes

The NZDAA is currently reviewing its "New Zealand Best Practice Guidelines for Demolition" which does include a separate Environmental Guidance Note. This guidance does include information for demolition operatives on practical measures for optimising recycling, reuse, and diversion activities and emission reduction.



### Feedback - Transport Emissions Plan

The NZDAA welcomes and supports research and development into low or zero emission alternatives including the use of biodiesel and tested hydrogen as an alternative fuel source for the nonroad equipment and road vehicles that is required to be used in our operator's businesses.

The NZDAA broadly supports the plans package of recommendations for the transport sector with a progressive reduction of 13% by 2030 and 41% by 2035. We also agree that the scale required to achieve these reductions and complete carbonisation cannot be overstated.

However, we reiterate that without Government support, including during its own procurement processes, our Industry would be unable to realistically meet emission obligations. This would have a dramatic effect on the overall construction Industry, for which our Industry is one of **the** pivotal suppliers.

Our Industry is immensely reliant on transport – for resources (people and plant) and waste. Our members conservatively operate over 300 heavy and medium truck units, and over 400 light vehicles nationwide – much of these run on non-renewable diesel fuel. Fuel efficiency is so important to our Industry – it is estimated that fuel represents around 30% of the running costs in the transport sector<sup>1</sup>. Given this significant cost, there is strong economic incentives for fuel efficiency improvement.

The very nature of our operations requires our members to rethink their work strategies to allow for the practicalities of implementing a reduction on reliance for heavy, medium and light vehicles.

#### Heavy and medium vehicles

The operators in our Industry generally operate medium (<10t) and heavy trucks (>10t) as part of a small fleet (5 or less vehicles), although there are a few that have up to 10 HV's in a combination of tractor and use a combination of trailers. However the ownership of HV's and MV's come with high operating costs (i.e. RUC's, fuel, insurances, repairs and maintenance) that this places limits on the ability for operators to invest in newer HV's, MV's and technologies

Our operators have over 700 HV's and MV's collectively, with an average age of 15 years. These vehicles travel large distances annually and have a gross vehicle mass (including payload) in excess of 20t up to 80t.

The NZDAA acknowledges that there is not a *"one size fits all"* solution for all HV's and MV's. Any strategy to reduce GHG from heavy duty vehicles has to take into account the key features of trucks:

<sup>&</sup>lt;sup>1</sup> European Automobile Manufacturers Association, 2017, Reducing CO<sub>2</sub> emissions from heavy-duty vehicles – an integrated approach

- The shape of trucks the more aerodynamic; the less resistance; the less fuel consumption
- The same tractor or engine may end up pulling very different trailers and combinations, effecting the GHG emissions of the complete vehicle<sup>2</sup>

Global manufacturers of HV's and MV's are committed to producing vehicles that lower GHG emissions using new technologies such as

- GPS based automated gearboxes, •
- IS, EMOLIZION • High-efficient exhaust after treatment systems,
- combustion and air handling, •
- aerodynamics,
- low rolling resistance tyres, and •
- advanced control systems.

#### Government incentivisation scheme

We recommend the introduction of incentive schemes to reduce the upfront costs of lowemission on-road HV and MV that meet with international Tier 4, 5 or Stage V emission standards. Further incentives should be accorded to hybrid and full electric HV and MV once they are in full production. These incentives, which may take the form of tax rebates will influence operators to upgrade their equipment in a shorter time period.

Such schemes should adjust prices of new equipment and should be in-line with depreciation or GST, whichever is higher, to recognise the significant capital outlay required.

#### **Biofuel mandate**

The introduction of a biofuel mandate would have an immediate impact on reducing GHG emissions<sup>3</sup>. However, infrastructure, supply, and pump cost limitations would need to be resolved first before this is fully introduced. A progressive phase out of fossil fuel subsidies would complement the mandate and encourage transition.

#### Road user charges

The NZDAA acknowledges that while there is no official research on the effectiveness of a road user charge exemption as a means of promoting the uptake of certain GHG reducing vehicles<sup>4</sup>, our operators testify that RUC's are a significant variable overhead as part of their operations. A tiered RUC system should be introduced to credit for reduced GHG technologies (Tier 4 or higher) and low carbon fuel (biofuels etc.) in HV's and MV's would be a significant persuader to operators and encourage transition.

<sup>&</sup>lt;sup>2</sup> European Automobile Manufacturers Association, 2017, Reducing CO<sub>2</sub> emissions from heavy-duty vehicles – an integrated approach -

<sup>&</sup>lt;sup>3</sup> Ministry of Transport, May 2020, Green Freight Strategic Working Paper

<sup>&</sup>lt;sup>4</sup> New Zealand Treasury, 2021, Regulatory Impact Statement extending the Light Electric Vehicle Road User Charges Exemption

#### Green hydrogen

Aotearoa does not currently have a commercial supply of green hydrogen which would be needed to support the transition to FCEV's. Government funding is required to de-risk private sector investment.

FCEV's are also a untested technology and vehicle availability and supply to Aotearoa will be a significant challenge to the Industry.

FCEV's offer greater range and faster refuelling therefore are potentially better suited for long haul operations, which suit many of our operators. FCEV's are a new technology in Aotearoa and clear compliance pathways and assurance around safety and handling of hydrogen as a hazardous substance will be required<sup>5</sup>

#### Low carbon fuel standards

A national low carbon fuel standard that covers a range of alternative fuels needs urgent attention to wrap around initiatives and would incentivise the Industry to move forward and transition with reduced risk.

#### Rail

Rail is well known as the most energy efficient and lowest GHG emitting forms of transport available. Integrated planning complimenting roading and rail infrastructure is vital to Aotearoa meeting is climate change obligations. This view is particularly important for regional growth and development.

The much lower carbon intensity of rail (per passenger or per tonne/km) compared with most other modes of transport, means the rail sector plays a key role in containing global GHG emissions.<sup>6</sup>

The NZDAA views rail as an under-utilised yet crucial element in our national arsenal to reduce our transport emissions and aggressive investment in robust and resilient heavy rail infrastructure is required by Government to improve its overall use nationally for both its economic, social, and environmental benefits.

Our Industry would reasonably utilise a integrated heavy rail / road network to:

- Transport construction equipment nationally; and
- Transport waste material regionally

Effectively reducing GHG and congestion on roads and improving road safety.

<sup>&</sup>lt;sup>5</sup> Ministry of Transport, May 2020, Green Freight Strategic Working Pape

<sup>&</sup>lt;sup>6</sup> International Energy Commission, 2019, The Future of Rail

#### *Government procurement practices*

Government needs to take leadership through its own procurement processes that must include emissions reduction initiatives, technology, and processes in all Government tenders as a weighted attribute. This would assess and acknowledge those businesses who are leading the way and taking the risks by investing in relatively new low or zero emission complying technology, expertise & equipment. We also recommend that there be a reduction to the significance given to price.

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#### NZDAA initiatives

The NZDAA is working to provide guidance to our Industry to change behaviours – trip planning, backloading, operator driving behaviour all have an important role to play in reducing fuel reliance and emissions. It is through education that the NZDAA sees the greatest opportunity for improvement to produce the necessary behavioural changes.

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### Feedback: Construction Emissions Plan

NOTE: this feedback is for nonroad compression-ignition (diesel) engine machines including excavators and other construction equipment, farm tractors and other agricultural equipment, forklifts, airport ground service equipment and utility equipment such as generators, pumps and compressors.

Excavators are one of the most energy intensive elements of the construction Industry – they dominate as **the** major contributor to emissions from construction projects. Predicting the energy consumption and GHG emissions of excavators is therefore critical in order to mitigate the environmental impact of our operations.

#### Using Biodiesel to reduce energy use in nonroad construction equipment

Diesel; a non-renewable resource, is the primary fuel used for all nonroad construction equipment and vehicles that dominate the construction and demolition Industry. These include:

- Trucks (HV's and MV's) and light vehicles
- Excavators
- Skidsteers
- Recycling equipment including crushers, balers, screeners, stackers and separators
- Elevated work platforms
- Generators
- Forklifts
- Compressors, welding units (non-arc), pumps
- Mobile and tracked canes

The alternative in Biodiesel (conventional and advanced), however is viewed by many operators with scepticism due to widely held views that it requires modifications or damages internal mechanisms within the machine and reduces the necessary power required for tasks. Contrary to such falsehoods, the use of biodiesel does not require any modifications to a machine, and does not damage the machine. The only requirement is fuel filter monitoring and changing in the first few months of use. Therefore this perception needs to be challenged by those respected early movers in the Industry to allow operators to move forward.

While hydrocarbons, carbon monoxide and particulate matter are all reduced as a greater blend of biodiesel is used, nitrogen oxide emissions are found to be slightly higher. But even with these elevated  $NO_x$  emissions, biodiesel emissions are still 74% lower than those from traditional diesel<sup>7</sup>

<sup>&</sup>lt;sup>7</sup> Omeed Abolfathi California Polytehcnic State University, 2019, Reducing energy use in excavators with Biodiesel

We believe that the bioeconomy has a vital role to play in an integrated energy system especially in Aotearoa's transition to a low gross emissions economy.

- i. Biofuels and biogas can play an important role; and
- ii. It is not going to develop to its full potential without cooperation. Government and Industry need a cooperative role here. Conventional (or blended) biofuels are still in pilot or demonstration phase, but once developed could also reduce biowaste to landfill
- iii. Unlike other alternatives such as EV, HEV or hydrogen celled vehicles, biofuel use is not dependent on new fuel infrastructure<sup>8</sup>
- iv. The NZDAA expresses concern over Z Energy's intent to close the only Aotearoa commercial Biodiesel manufacturing plant should it not receive Government support to allow it to be commercially viable and reduce its per litre cost to consumers
- v. Biofuels in its current state is not economically viable for operators. Alternatives would need to be cost competitive to be attractive to the market therefore a price subsidy for biofuels at the pump must be strongly considered.

#### Electric, hybrid and low emission nonroad construction equipment

Global nonroad and construction equipment, HV and MV manufacturers introduced low emission machinery and trucks in 2014 in order to comply with the United States EPA Tier 4 Emission Standards. This means that a significant portion of liquid fuel run nonroad construction equipment and trucks manufactured after 2014 should meet these emission standards.

Much of Aotearoa's nonroad construction equipment is over 10 years of age.

Global equipment manufacturers such as Brokk, Huskvana, JCB, Volvo and Bobcat for example, have been manufacturing fully electric heavy duty excavators since 2019. Our Industry has already realised and capitalised on the versatility and safety applications of these machines, although they remain to be cost prohibitive to all operators.

#### National emission standards for nonroad equipment

The NZDAA recommends that the Government work with Industry (manufacturers and operators groups) to formally adopt the EPA Emission Standards. This should be done as soon as practicable.

These standards can be phased in over the next three to five years (in recognition that there is a percentage of existing fleet that already comply and the availability of such technology) before progressing to EU Stage V or EPA Tier 5 (currently under development but will most likely mirror Stage V) over a period of 5 -15 years. This would be a significant incentive to operators to upgrade their aging fleet.

<sup>&</sup>lt;sup>8</sup> Ministry of Transport – Biofuels <u>https://www.transport.govt.nz/area-of-interest/environment-and-climate-change/biofuels/</u>

It is expected that some specialist equipment may require exemptions due to their specific and often intermittent use.

#### Government incentivisation scheme

To compliment the emission standards and to not unfairly exclude businesses from making the necessary changes, we recommend the introduction of incentive schemes to reduce the upfront costs of low-emission nonroad construction equipment that meet with international Tier 4, 5 or Stage V emission standards. Further incentives should be accorded to hybrid and full electric nonroad equipment. These incentives, which may take the form of tax rebates will influence operators to upgrade their equipment in a shorter time period.

Such schemes should adjust prices of new equipment and should be in-line with depreciation or GST, whichever is higher, to recognise the significant capital outlay required.

#### Government procurement practices

Government needs to take leadership through its own procurement processes that must include emissions reduction initiatives, technology, and processes in all Government tenders as a weighted attribute. This would assess and acknowledge those businesses who are leading the way and taking the risks by investing in relatively new low or zero emission complying technology, expertise & equipment. We also recommend that there be a reduction to the significance given to price.

#### NZDAA initiatives

The NZDAA is working to provide guidance to our Industry to change behaviours – regular maintenance, tool selection, and operator behaviour all have an important role to play in reducing fuel reliance and emissions. It is through education that the NZDAA sees the greatest opportunity for improvement to produce the necessary behavioural changes.

In addition, the NZDAA is currently developing national training standards and certificates for demolition, including a certificate in electric excavator operations. Emission reduction techniques, recycling, recycling practices and opportunity recognition standards are incorporated into the qualification to give cadets a robust and rounded background in the future of demolition practices and where the Association, and society, see, expect, and demand demolition and recycling practices to sit.

#### Green investment fund

Some funding is available through the Green Investment Fund, however the application process is complex and heavily weighted towards economic outcomes. The application process needs to be streamlined and pro-active, realistic assistance and advice given to kiwi SME;s to genuinely guide them through the process.

#### Temporary builders supply

GHG emitting generators are often used within construction worksites to:

- Operate temporary buildings
- Operate construction equipment and machinery

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We recommend that single and 3 phase temporary builders supplies be required for all construction activities over a minimum dollar threshold (reasonably overall \$1M project value) and that they be installed or the means necessary to allow them to be installed reasonably easily before any activity start onsite, including demolition or remediation works.

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This requirement would also allow for the necessary infrastructure onsite to allow for <1,70 1 2 Operators to utilise electric or hybrid technologies. 5 A.

### About The New Zealand Demolition and Asbestos Association

The NZDAA, a not-for-profit society which is established to maintain and extend the interests of the professional Demolition and Asbestos Industry throughout New Zealand. The underlying principles of the Association are to widely promote; through leadership; excellent commercial health, safety, environmental and quality performance for better outcomes for workers, businesses, and the community. This will be done through training and education, advocacy, and research as well as targeted activities to promote the industry.

Our membership comprises of over 80 businesses from all sectors of the demolition and asbestos industry, servicing all regions of Aotearoa, are united in their ambitions for a sustainable Aotearoa. Members represent more than \$600 million of collective turnover, and nearly 1,000 full-time jobs.

Our professional members include:

PESTOS





















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## NZEI TE RIU ROA

Submission to the Ministry for the Environment on the Emissions Reduction Plan 24 November 2021

#### Introduction

NZEI Te Riu Roa is the union for almost 50,000 principals, teachers, support staff and other education professionals who work in primary, area and secondary schools, early childhood centres, special education and school advisory services.

As educators, we are, in effect, 'second responders' in our communities. We see first hand the impacts that social, economic and environmental crises have on tamariki, families, whānau and the wider community. We share with many others in our communities a genuine sense of urgency and a desire to see transformational action on climate.

Education must be transformed to catalyse the fight against climate change and to support a just transition to a more sustainable world. Those most affected by climate change must have a seat at the table. Educators have an important contribution to make in a climate transition, supporting the social and cultural transitions necessary for a low-emission future. Students have a right to develop the knowledge, skills and attitudes necessary to sustain our world for present and future generations, and they have the right to receive an education which prepares them for the world of work in a green economy.

Like other education unions across the planet, we are calling on our government to deliver on its commitments to climate change education and education for sustainable development in the Paris Agreement (article 12) and the 2030 Agenda for Sustainable Development (targets 4.7, 12.8 and 13.3).

As we respectfully submitted to the Climate Change Commission's final report in May 2021, meaningful action on climate change will require genuine engagement with Tangata Whenua, Pacific island communities, unions, young people, disabled people and all structurally oppressed groups. It is time to come together to build more resilient education institutions, communities, and economies, while reducing our ecological footprint through a just transition. We strongly encourage the Government to take up offers from civil society to genuinely and deeply engage around the many pressing issues that fall within the remit of climate change.

#### Ngā mihi

Liam Rutherford President / Te Manukura NZEI Te Riu Roa Comments from members:

"We need to educate our children now - give them knowledge about our future and how to keep our environment healthy and safe."

Doris Anschober, Auckland

"Teaching our tamariki about all of these matters is imperative."

Amanda Voyce, Otago

"Tēnā tātou katoa! Our whānau have grave concerns for our tamariki and mokopuna and the world they will inherit ...we are responsible to educate and resource them to restore a lowcarbon environment, to ensure their wellbeing for their future..."

Maria Robin, Hawke's Bay

"The tamariki I teach care deeply for te taiao and they love taking action.

#### The Government's Draft Emissions Reduction Plan

This submission outlines our vision for quality climate change education, a decarbonised education sector, and the engagement of Tangata Whenua, Pacific communities, working people in their unions and other sectors of civil society in a dialogue around a just transition.

We acknowledge that the government's plan is incomplete and requires input and feedback. We welcome the opportunity to contribute - in particular to strengthen the very weak attention given to date to the contribution that the education sector can make to emissions reduction.

#### Key areas of focus

- 1. Upholding tino rangatiratanga
- 2. Iwi Māori and Pacific Islands communities in a Just Transition
- 3. The role of climate change education in a low-carbon economy
- 4. Decarbonisation of the education sector
- 5. Engagement with working people

#### Key recommendations

- Recommendation 1: To give effect to a truly Just Transition, the government's response to the climate crisis must reflect New Zealand's commitment to Te Tiriti o Waitangi and affirm tino rangatiratanga, the right of mana whenua to exercise kaitiakitanga and the protection of taonga katoa.
- Recommendation 2: Plans to reduce emissions should be co-developed in genuine partnership with Pacific Island people's communities in Aotearoa.
- Recommendation 3: In the absence of UNFCCC-led reporting requirements, Aotearoa New Zealand should be setting its own strategy and action plan for climate change education and the Ministry for Education should be held accountable for reporting against those.
- Recommendation 4: Increase Aotearoa's investment in climate change education and its climate financing commitment to Pacific neighbours.
- Recommendation 5: The curriculum framework should provide a pathway for the integration of climate change education into all learning areas, foregrounding mātauranga Māori, civic engagement, and sustainability science. The current Curriculum Refresh should include a revised vision for learners, a refresh of every learning

They want to see less rubbish on the streets and beaches, more trees being planted in their neighborhoods and safe options so that they all have better transportation around the city. When tamariki leave our kindy for school they are disappointed that there are not better waste options in homes, schools and across the city. There learning from Kindergarten is often not carried over to their schools and this isn't good enough. We want them and their whānau to be able to continue their sustainability journey when they go to school and into their communities so that it is a way of life as they grow, not just a phase for a few vears. All of these aspects impact climate change and until more people and communities make changes we will be stuck where we are. I want to teach my tamariki that their passion can make a difference and that they can lead us on this journey. Their voices need to be heard and the education sector given the time and resources to

area and potentially other aspects of the curriculum (principles, values, key competencies), and a commitment to centring climate change education in all future curriculum updates.

- Recommendation 6: Teacher education providers should be funded to deliver quality Initial Teacher Education so that student teachers are prepared to teach climate change education. Climate change education should be included in continuous professional development programmes for practising teachers.
- Recommendation 7: Government should provide teachers with teaching and learning resources to support them to teach climate change education. These resources need to be:
- Tiriti-based
- up to date
- evidence/research-based
- Gender-responsive
- adapted to local contexts
- in local languages, and culturally appropriate
- sensitive to the development needs of teachers and students alike.
- **Recommendation 8:** We need to ensure that:
- a) There is urgent investment in renewable energy
- b) All remaining fossil-fuel-fired boilers are funded for conversion to renewable energy by 2025. Currently only around 8% of the remaining 1140 schools with fossil fuel burning school boilers have been funded to transition to renewable energy. The pace of investment in school boiler conversion therefore needs to be dramatically picked up.<sup>1</sup>
- c) All schools undertake an annual carbon profile, in line with the renewal of their Charter. An assets tool for education facilities to be graded against in relation to their carbon footprint could be introduced, akin to the New Building Standard for earthquake rating.
- d) Education providers at all levels prioritise and invest in making education institutions environmentally friendly.
- e) School leaders, teachers and education support personnel are supported and trained to climate proof their institutions.
- f) Students are involved in sustainable practices at education institutions in collaboration with the broader education community.

support this. It is no longer an optional subject, we need strong commitment to climate change action across Aotearoa."

Chandra Littlewood, Wellington

"I want my children's children to live in a world where they can stand on the top of their maunga and breath fresh air. They can swim in rivers and the moana and be safe."

Kahurangi Carter, Canterbury

"We need to tease out how we are going to tackle climate change by providing our students + staff with the knowledge and understanding of the small incremental steps we can take. Providing our students with actual examples of the 'what' and 'how' of lowering emissions looks like. We need to provide students (present + future) with the bigger picture also so that they can aim to continue to lower emissions for future generations."

<sup>&</sup>lt;sup>1</sup> <u>https://350.org.nz/fossil-free-schools/</u>

- Recommendation 9: The voice of educators both as workers and as members of their communities - should resonate in social and policy dialogue. From an education union perspective, genuine stakeholder engagement is required to ensure that educators' experience and expertise can be put to best use in a climate transition.
- Recommendation 10: As part of a just transition, access to quality technical and vocational education and training, including apprenticeships, and higher education should also be expanded, equipping all those who need it with the skills needed for careers in the emerging green economy.

### **1. UPHOLDING TINO RANGATIRATANGA**

Māori communities will be severely affected by climate change. Climate change will make it harder for whanau, hapū and iwi to practice kaitiakitanga and to maintain many cultural practices. Marae and urupa are already subject to inundation in many areas. When industries close down, it is often Māori communities who bear the earliest and deepest impacts.

At the outset, the kinds of questions we should be asking include:

- How can we genuinely ensure that the government's response to the climate crisis reflects New Zealand's commitment to Te Tiriti o Waitangi?
- To what extent is Article Two of Te Tiriti being upheld via affirmation of tino rangatiratanga and protection of taonga katoa?
- How will the voices of rangatahi Māori be included?
- In what ways and to what extent have iwi Māori such as rūnanga been engaged?
- What would a tikanga Māori way of transitioning to a lowemissions society look like?

The draft Emissions Reduction Plan needs to be assessed against these and other questions.

**Recommendation 1:** To give effect to a truly Just Transition, the government's response to the climate crisis must reflect New Zealand's commitment to Te Tiriti o Waitangi and affirm tino rangatiratanga, the right of mana whenua to exercise kaitiakitanga and the protection of taonga katoa.

#### 2. LOCAL PACIFIC ISLANDS COMMUNITIES IN A JUST TRANSITION

Marie-Therese Stevenson, Auckland

"I fully support the greater goals and values of urgent emissions reduction and climate action in all parts of society. I see a massive disconnect between what's required of us as citizens and the dubious reality of Groundswell protests etc. I'm just outraged that Gore region doesn't even have kerbside recycling. We need to do so much so soon and society needs to change so fast - please provide clear leadership action and drive results humanity needs."

John Carter, Murihiku

"Climate action will be accelerated when our society can be mobilised at grassroots level. **Teachers are** change makers, and could be instrumental in making this happen by involving our children and their families in environmental education and action."

Elise Van de Ven, Auckland
Currently there is a stark omission in the draft Emissions Reduction Plan with regard to the impacts of climate change on Pacific Island people's communities and how they will be involved in dialogue around a Just Transition. The word 'Pacific' appears only twice in the whole document.

Pacific communities are already being deeply affected by climate change. Pacific nations are already facing displacement of whole communities due to sea level rise and increasingly volatile weather patterns. Pacific communities in Aotearoa, including our union's Pasifika Leaders Network, are deeply concerned about the situation in their home islands. Here in Aotearoa, Pacific communities also often struggle with socio-economic challenges. These could be greatly worsened by a poorly planned climate transition. The government's response to the climate crisis must include genuine engagement with Pacific Island communities.

**Recommendation 2:** Plans to reduce emissions should be codeveloped in genuine partnership with Pacific Island people's communities in Aotearoa.

## 3. THE ROLE OF CLIMATE CHANGE EDUCATION IN A LOW-CARBON ECONOMY

Climate change education - also known as Action for Climate Empowerment<sup>2</sup> - isn't just learning about climate change. Climate change education is learning that:

- supports active engagement in solutions-focussed, civically engaged, child and youth-centred approaches to climate transitions
- supports local communities to collaborate to develop localised solutions and safe, healthy, climate-resilient, low-carbon communities, towns, and cities.
- provides educational environments that nurture hope and help rangatahi to be emotionally resilient as they work towards a just transition. The emotional aspect of climate change education is key as it drives willingness to engage in action.

Quality climate change education is critical to the future stability of Aotearoa as an effective and peaceful democracy, in a future where we will increasingly need to find peaceful solutions to conflicts arising from climate change.

It's just not a public education campaign. Rather, it requires a properly thought-through plan that supports the education sector

"Start as we mean to go on. Investment in ECE curriculum and teaching around climate awareness and sustainability will lay the strongest foundation for future action. First teach the kaiako. they will teach the tamariki, and altogether we will be the change. Investment here provides a 'bottomup' push for change that compliments the 'top-down' mandates by our government. These top-down approaches work well for forcing business and government in the right direction, but less well at convincing the average citizen (people don't like being told what to do). By targeting schools (including ECE) with significant sustainability funding, we can channel high quality education not only to our future voting citizens, but to their whānau. our current votina citizens. Education is often the answer to our social crises (think vaccine hesitation) and the climate crisis is no different. Yes, do the

<sup>&</sup>lt;sup>2</sup> https://unfccc.int/topics/education-youth/the-big-picture/what-is-action-for-climate-empowerment

to play a key role in supporting learners and communities to adapt to a changing climate, while ensuring a rapid and socially just transition to a zero-carbon future.

In Aotearoa, education for transitions to a safe, low-carbon climate future must be underpinned by a commitment to genuine Tiriti partnerships in which mana whenua exercise their right to kaitiakitanga.

## 1. A CLEAR CLIMATE EDUCATION STRATEGY AND ACTION PLAN FROM GOVERNMENT

Currently there is a disconnect between climate policy and education policy - both domestically and internationally. The United Nations Framework Convention on Climate Change clearly signals that education has a key role in climate transition, "enabling society to be part of the solution"<sup>3</sup>. However extensive international analysis<sup>4</sup> clearly demonstrates that education sector policies are failing to support and enable the powerful potential role of education to be realised as a key lever for climate mitigation, adaptation, and transition.

This includes Aotearoa New Zealand. This country currently lacks any comprehensive strategy or plan for climate change education. Notably, the UK Secretary of Education announced a draft strategy this month that includes goals relating to curriculum and teacher education, student action, pathways to green jobs, and school properties. We can learn from the whole-system approach modelled in this strategy, and take it even further to support what is unique to Aotearoa New Zealand.<sup>5</sup>

As part of its emissions reduction planning, the government must make a commitment to clear, measurable indicators in education policy, infrastructure and property, and the curriculum. We expand on this point in the subsections below.

**Recommendation 3:** In the absence of UNFCCC-led reporting requirements, Aotearoa New Zealand should be setting its own strategy and action plan for climate change education and the Ministry for Education should be held accountable for reporting against those.

mandates and raise our taxes to pay for it if necessary. But keep us in the loop about every decision and make sure vou educate us. And because we know adults are bad at learning new tricks, get around us by teaching our tamariki! Give our tamariki the most up-to-date and accurate information and training in how to live sustainably and they will come home and teach us adults. They already are (Greta)."

Abraham Mains, Waikato

"We need to engage our children and communities in this discussion. By informing teachers and students we will create change within communities but we need support from councils and government."

Nicky Gray, Queenstown

"Climate change education - and that's not about

<sup>&</sup>lt;sup>3</sup> See Article 6 of UNFCC, <u>Education and Training under Article 6 | UNFCCC</u>

<sup>&</sup>lt;sup>4</sup> Marcia McKenzie (2021) Climate change education and communication in global review: tracking progress through national submissions to the UNFCCC Secretariat, *Environmental Education Research*, 27:5, 631-651, DOI: <u>10.1080/13504622.2021.1903838</u>

<sup>&</sup>lt;sup>5</sup> See https://www.gov.uk/government/news/education-secretary-puts-climate-change-at-the-heart-of-education--2

#### 2. GREATER DOMESTIC INVESTMENT AND OVERSEAS SUPPORT

Well-funded, strong public education systems are a prerequisite for promoting quality climate change education for all. Systems are further strengthened through overseas development aid, international cooperation, and open access to resources and knowledge. We can be a responsible international partner, especially with regard to our neighbours and whānau in the Pacific, if we ensure that emission reductions are achieved in ways that genuinely support the self-determined development goals of partner countries and communities.

**Recommendation 4:** Increase Aotearoa's investment in climate change education and its climate financing commitment to Pacific neighbours.

#### 3. INTEGRATION OF CLIMATE CHANGE EDUCATION INTO CURRICULA IN EARLY CHILDHOOD, PRIMARY AND SECONDARY EDUCATION

Every student should leave education climate-literate and equipped with the skills and knowledge needed to tackle climate change, adapt to uncertainties, and take part in building a more sustainable future for all. To achieve this, government should develop, implement, and evaluate climate change education policies at all levels of the education system in close collaboration with education unions, student organisations, Māori and Pacific Island people's organisations, queer, disabled and migrant communities.

Climate change education should be based on science (including Mātauranga Māori), and should address the ethical, cultural, political, social and economic dimensions of climate change; in particular, our Tiriti commitments and obligations to Pacific neighbours. It should be integrated across all subjects and education institutions should be supported to take an interdisciplinary and whole-institution approach to climate change education, as research shows this is the most effective approach.

Climate change education should address the unequal contribution of countries to climate change, and acknowledge that current levels of production and consumption are unsustainable. It should recognise that vulnerable populations and groups are the most directly affected, including low-income countries, small island states, poor communities, indigenous peoples, people with disabilities, people of colour, women, girls, and children. It should foster critical and systems thinking and civic engagement, it should be transformative, and it should empower students to consider just and sustainable alternatives, and lead to taking collective action in their local communities and beyond. It should also speak to the role of empowerment and action in alleviating feelings of alienation, anxiety and existential grief, both for educators and tamariki/rangatahi. changing light bulbs but learning about the big emitters and real actions needed to severely reduce emissions need to be centre and front in education. We need a strong mandate for all aovernment departments and government agencies to provide education around what:

A) the major sources of emission are in the world and New Zealand.
B) what actually works and what is needed locally, nationally and internationally to reduce our emissions.

C) and how we are doing in reducing our emissions in the transport and agricultural sector and other sectors. I would love to run education programmes on climate change - I work as an educator in a museum under the district council umbrella. I chip in and talk about climate action as much I can BUT...Make it a priority for agencies who provide education to provide it on why it is sooo important to be taking climate action and ways in which we can.

**Recommendation 5:** The curriculum framework should provide a pathway for the integration of climate change education into all learning areas, foregrounding mātauranga Māori, civic engagement, and sustainability science. The current Curriculum Refresh should include a revised vision for learners, a refresh of every learning area and potentially other aspects of the curriculum (principles, values, key competencies), and a commitment to centring climate change education in all future curriculum updates.

#### 4. INITIAL TEACHER EDUCATION AND CONTINUING PROFESSIONAL DEVELOPMENT

Climate change education needs to be integrated into all preand in-service teacher education programmes. Government needs to make a clear commitment to providing increased, consistent professional learning and development and initial teacher education so that educators are equipped and supported to provide quality climate change education. Government and institutional support must be extended to help student and beginning teachers upskill and innovate on climate change education.

**Recommendation 6:** Teacher education providers should be funded to deliver quality Initial Teacher Education so that student teachers are prepared to teach climate change education. Climate change education should be included in continuous professional development programmes for practising teachers.

#### 5. TEACHING AND LEARNING RESOURCES FOR CLIMATE CHANGE EDUCATION

**Recommendation 7:** Government should provide teachers with teaching and learning resources to support them to teach climate change education. These resources need to be:

- Tiriti-based
- up to date
- evidence/research-based
- Gender-responsive
- adapted to local contexts
- in local languages, and culturally appropriate
- sensitive to the development needs of teachers and students alike.

Locally, nationally and internationally and of course a part of that can be on a personal level. Let's face it just doing your bit won't cut the mustard - we need well informed citizens."

Nathan Hills, Taranaki

"Governments have failed to combat climate change. The least thing we can do for our tamariki is to teach how to adapt to a lowcarbon future. to empower students to take part in the transition to a lowcarbon world and the most important of all how to (re) connect with papatuanuku. She knows (and already has) all the answers and solutions. Give teachers and schools the resources and support they need for this journey."

Karin Eaton, Manawatu

"The climate crisis is a huge issue in current and future wellbeing for all aspects of everyone in Aotearoa New Zealand, and the world. Climate change education should be included in the curriculum of

# 3. DECARBONISING THE EDUCATION SECTOR

Government must invest in making education infrastructure safe and climate resilient. It should collaborate with unions to transform education institutions into workplaces that are sustainable and energy efficient. Schools and learning environments can be transformed to support quality climate change education.

**Recommendation 8:** To do this we need to ensure that:

- g) There is urgent investment in renewable energy
- h) All remaining fossil-fuel-fired boilers are funded for conversion to renewable energy by 2025. Currently only around 8% of the remaining 1140 schools with fossil fuel burning school boilers have been funded to transition to renewable energy. The pace of investment in school boiler conversion therefore needs to be dramatically picked up.<sup>6</sup>
- All schools undertake an annual carbon profile, in line with the renewal of their Charter. An assets tool for education facilities to be graded against in relation to their carbon footprint could be introduced, akin to the New Building Standard for earthquake rating.
- j) Education providers at all levels prioritise and invest in making education institutions environmentally friendly.
- k) School leaders, teachers and education support personnel are supported and trained to climate proof their institutions.
- Students are involved in sustainable practices at education institutions in collaboration with the broader education community.

## 4. ENGAGEMENT WITH WORKING PEOPLE

We can achieve so much to meet our international and domestic commitments to reducing emissions if we start now with a Just Transition. The current draft Emissions Reduction Plan makes little mention of the constructive and vital role that working people in their unions can and must play to help us all transition to a low-carbon future; yet without this engagement, from the outset and not as an afterthought, effective policy implementation cannot occur - and worse, is likely to have severe unintended consequences.

To ensure social licence, any transition process must be codesigned with working people, including Māori as Tiriti partners school students and tertiary levels for teacher education. We need to equip learners with knowledge, skills and abilities to feel they can be part of tackling the climate crisis. We need everyone on board to help mitigate the harm which is being caused by the climate crisis, and education sectors are so important in this."

Rebecca Dent, Canterbury

"Schools should be providing leadership in combating climate change by modelling how to reduce carbon and by educating the young on the science of climate change and how to reduce it. Some schools do this well but in others it is not prioritised. There also needs to be funds available for schools to use to make the necessary changes. This is urgent business as we all try to reduce our emissions by half by the end of the decade."

Jane Boothby, Auckland

<sup>&</sup>lt;sup>6</sup> <u>https://350.org.nz/fossil-free-schools/</u>

and Pacific Islands communities from the start. The voices of disabled, queer and migrant workers and their diverse communities must also be genuinely included.

**Recommendation 9:** The voice of educators - both as workers and as members of their communities - should resonate in social and policy dialogue. From an education union perspective, genuine stakeholder engagement is required to ensure that educators' experience and expertise can be put to best use in a climate transition.

**Recommendation 10:** As part of a just transition, access to quality technical and vocational education and training, including apprenticeships, and higher education should also be expanded, equipping all those who need it with the skills needed for careers in the emerging green economy.

This is no time for empty promises, hesitation, deliberations, consultation and Blah Blah Blah. Now is the time for swift and sweeping change our young people know it and so do we.

Carol Webb, Waikato



22 November 2021

Ministry for the Environment

By email: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

#### **Emissions Reduction Plan**

"achieving net zero emissions is the most important global health intervention now and for decades to come" – Dr Margaret Chan, former WHO Director-General<sup>1</sup>

Dear Colleague,

The New Zealand Medical Association (NZMA) wishes to provide feedback on the above consultation. The NZMA is New Zealand's largest medical organisation, with about 5,000 members from all areas of medicine. The NZMA aims to provide leadership of the medical profession, and to promote professional unity and values, and the health of all New Zealanders. We recognise the principles of te Tiriti o Waitangi and the special obligations to Māori, particularly to ensure equity and active protection. Current disparities in health outcomes between Māori and non-Māori are unacceptable. The NZMA is committed to advocating for policies in health and the social and wider determinants of health that urgently address these disparities and contribute to equity of health outcomes. Our submission has been informed by feedback from our Board, Advisory Councils, members and OraTaiao: New Zealand Climate and Health Council, of which the NZMA is a member.

#### **General comments**

1. We welcome the Ministry's discussion document on transitioning to a low-emissions and climate-resilient future. We note that consultation on this document is intended to inform the first emissions reduction plan which is the next step in the Zero Carbon Bill process, building on the Climate Change Commission advice to Government published in June 2021. It is unfortunate that publication of the first emissions reduction plan has already been delayed by 5 months till May 2022. We believe that responses to climate change need to be given the urgency commensurate with the Government's declaration of a climate emergency in December 2020.

2. While the shape of the proposed emissions reduction plan puts New Zealand on target for net zero emissions of long-term greenhouse gases by 2050, and a reduction of short-term greenhouse gases, including biogenic methane, of 24–48% by the same date, our view is that it is not ambitious enough and flawed in many critical areas. Notably, health and wellbeing considerations are not afforded the paramount position they should be, and there is an overall lack

of recognition, quantification and optimisation of the health co-benefits of climate action. Furthermore, the discussion document is profoundly deficient in how it addresses agricultural and food systems, despite these being responsible for nearly half of New Zealand's emissions profile. We elaborate on our concerns in our responses to the three consultation questions below but first we briefly reiterate the important links between health and climate change / climate action.

#### The links between climate change and health

3. Climate change is a serious and leading threat to health and health equity, both in New Zealand and worldwide. Indeed, a seminal report in The Lancet identified climate change as the biggest global health threat of the 21st century.<sup>2</sup> Nevertheless, well planned and effective measures to mitigate climate change can have substantial health (and health equity) co-benefits;<sup>3</sup> tackling climate change could be the greatest global health opportunity of the 21st century.<sup>4</sup> For example, a shift to active and public transport, a diet with less red meat and animal fat, and improved housing energy efficiency can, in addition to reducing greenhouse gas emissions, bring about substantial health and health equity co-benefits, including reductions in type 2 diabetes, heart disease, road traffic accidents, cancer, respiratory disease, and improvements in mental health.<sup>5–9</sup>

4. The former head of the WHO, Dr Margaret Chan, wrote in February 2021 that "achieving net zero emissions is the most important global health intervention now and for decades to come."<sup>1</sup> Tellingly, this statement is made in the context of the Covid19 pandemic and increased future pandemic frequency. She also noted that the "health benefits [of well-designed climate policies] will outweigh the costs of mitigation policies, even without considering the longer-term health and economic benefits of avoiding more severe climate change".

#### **Responses to consultation questions**

## 1. What do you think are the most important things to be considered in the development of the emissions reduction plan?

5. Health and wellbeing considerations must be put at the heart of the emissions reduction plan. Well-designed health-centred climate action will maximise both health benefits and emissions reductions. A recent modelling study of nine countries with 50% of the global population and 70% of global emissions found that Nationally Determined Contributions (NDCs) consistent with the Paris Agreement and supported by well-designed climate action could lead to substantial health benefits.<sup>10</sup>

6. The emissions reduction plan must be fit for purpose and reflect New Zealand's obligations to contribute our fair share towards limiting global warming below 1.5 degrees. New Zealand's most recently updated NDC is not compatible with 1.5 degrees,<sup>11</sup> and hides the fact that domestic emissions will only be cut by around 7–9% below 2005 levels by 2030 on a net-net basis. Post-COP26, New Zealand must considerably scale up our NDC. This enhanced NDC must be primarily met by the emissions reduction plan.

7. The emissions reduction plan must prioritise investment in urgent emission cuts here in New Zealand. Using overseas carbon markets and offsetting emissions with forestry expansion and land-use change must not be used to delay the rapid decarbonisation needed in New Zealand.

8. Every part of the emissions reduction plan must be based in te ao Māori and te Tiriti partnership. It needs to be appropriately resourced and have proper Māori representation and leadership.

9. Alongside the emissions reduction plan, it is essential to prioritise measures that reduce vulnerability so that low emissions living is easy and affordable for everyone. This includes measures to address key social determinants of wellbeing such as housing, income, employment, healthcare and education.

10. The top 10 biggest-emitting companies in Aotearoa likely account for almost half the country's greenhouse gas emissions.<sup>12</sup> Our view is that the worst climate polluting companies need to be held fully accountable.

#### 2. What new initiatives would you include in an emissions reduction plan for Aotearoa?

11. The emissions reduction plan needs an urgent and comprehensive plan to help the agricultural sector improve their emissions profile. As it stands, the discussion document is profoundly deficient in how it addresses agriculture and food systems, despite these being responsible for nearly half of New Zealand's emissions. We believe that more ambitious reductions in agricultural emissions are urgently needed. These should occur as part of the efforts to establish a food system that is equitable, improves health, is based on te Tiriti and reduces greenhouse gas emissions and environmental pollution. More attention also needs to be given to diet. Unhealthy diets are not only increasing the burden of obesity and diet-related noncommunicable diseases, they are also contributing to environmental degradation.<sup>13</sup> A shift away from red meat consumption towards a more plant-based diet would substantially reduce greenhouse gas production from the food system and also have many important health benefits.

12. While we welcome the four new transport targets for 2035, we would like these to be more ambitious and to be brought forward. It is imperative to achieve a transformational shift in transport to move our country away from the use of fossil-fuelled private vehicles. Key measures include greater investment in interconnected cycling and walking infrastructure, public transport, community car-share schemes, rail investment and intercity non-aviation transport options. We also support the Climate Change Commission's recommendation for phasing out the importation or assembly of all internal combustion engine light vehicles, and believe this should occur by 2030 at the latest.

13. The health sector is the largest greenhouse gas emitter in the public sector. As such, we recommend the inclusion of a clear plan to guide the health sector reduce its emissions. This will need the incorporation of a sustainability unit in the new Health New Zealand and Māori Health Authority structures, along the lines of the Greener NHS system in the UK.

14. F-gases are a significant contributor to healthcare emissions via anaesthetic gases and metered-dose inhaler propellants, yet there is no mention of these sources in the discussion document which focuses solely on refrigeration and air-conditioning. We believe these should be specifically addressed within the emissions reduction plan.

15. One of the biggest sources of carbon emissions in healthcare is via pharmaceuticals and procured equipment. Given that both categories fall under the remit of PHARMAC, we believe it is essential that all-of-life environmental impacts constitute a defined part of PHARMAC's decision-making policies. We suggest the plan signal strengthening of government rules aligning procurement with low emissions such that PHARMAC and other public-sector procurement agencies give more emphasis to environmental costs in their purchasing processes.

## 3. What do you see are the main opportunities and impacts of emissions reduction policies in *Aotearoa*?

16. Well planned and effective measures to mitigate climate change can have substantial health (and health equity) co-benefits. A major impact of well-designed emissions reduction policies will be a healthier, more resilient and more equitable Aotearoa. The health benefits of climate action must not be underestimated and can be a crucial driver of behaviour change as they will be realised far earlier than any climate benefit. The evidence indicates that health-centred climate action self-funds via health gains even before counting savings from avoided climate change.<sup>1</sup> Accordingly, health co-benefits must be counted when evaluating mitigation strategies.

17. Finally, given the clear health benefits of climate action, and health costs of climate inaction, we reiterate our call for the Minister for Climate Change to appoint specialists in public health and health equity to those entities planning our climate change response including the Climate Change Commission and the Ministry for the Environment.

We hope our feedback is helpful.

Yours sincerely



### NZMA Chair

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24 November 2021

climateconsultation2021@mfe.govt.nz

Submission: Ministry for the Environment - Emissions Reduction Plan Consultation

The New Zealand Marine Sciences Society (NZMSS) - Te Hunga Mātai Moana O Aotearoa is a professional society affiliated to the Royal Society of New Zealand - Te Apārangi. NZMSS has approximately 470 members. We are a non-profit organisation that provides access to, and within, the marine science community, and we identify emerging issues through annual conferences, annual reviews, a list serve and a website <u>www.nzmss.org.nz</u>. NZMSS membership covers all aspects of scientific interest in the marine environment and extends to the uptake of science in marine policy, resource management, the environment and the marine business sector. We speak for members of the society and we engage with other scientific societies as appropriate.

NZMSS recognises the science conducted by the Intergovernmental Panel on Climate Change (IPCC) and therefore supports urgent and ambitious climate action by the Aotearoa New Zealand Government. However, NZMSS identifies a crucial gap in MFE's draft emissions reduction plan, which is the lack of coverage on the marine environment.

The marine environment plays a crucial role in emissions reduction, particularly in relation to nature-based solutions as well as to developing a circular economy (e.g. in the food production, energy and waste sectors). We recommend that the <u>government acts urgently to protect and restore vital marine carbon sinks and to promote and support marine-related sectors contributing to the circular economy</u>. We also support the plan's reference to future research and we identify priority areas of research relating to emissions reduction in the marine environment.

Please contact me at the email address provided below for any further information regarding this submission. NZMSS has a panel of experts in marine and climate science who can assist with options and approaches in relation to this emissions reduction plan.

President, New Zealand Marine Sciences Society Address for service:

## Submission: 2021 Emissions Reduction Plan Consultation

#### General comments and submission overview

NZMSS welcomes the release of the draft emissions reduction plan (the Plan) for consultation. We note that the Plan is heavily weighted towards mitigating terrestrial sources of greenhouse gas emissions, and the need to improve policy settings in this domain to facilitate a more rapid reduction in emissions. Marine-related solutions are currently recognised in the Transport (i.e. coastal and maritime shipping) and Waste (i.e. fisheries biomass) sections of the Plan. However, we wish to draw the Ministry for the Environment's (MfE) attention to the general lack of coverage on the marine domain. The Plan does not mention the word "marine" at all, and "ocean" only twice (in the definitions of 'carbon sequestration/sink' and 'fossil gas'). This is a significant gap, particularly in context of 'nature-based solutions' being embedded within the Plan's guiding principles. In our submission, which builds on the previous NZMSS submission to the Climate Change Commission, we identify:

- Aotearoa New Zealand's marine environment
- The role of the ocean in carbon storage
- Human impacts on marine carbon storage
- Marine-related emissions reductions solutions for Aotearoa New Zealand.

#### **NZMSS** recommendations

**Recommendation 1:** NZMSS recommends that MfE's emissions reduction plan be revised to recognise the crucial role of the Aotearoa New Zealand's marine domain in emissions reduction. Regarding the Plan, we therefore recommend that the 'Agriculture and Forestry' category be extended to include 'Marine-Based Primary Industries' or similar wording.

**Recommendation 2:** That the Government acts urgently to protect and restore vital marine carbon sinks and to promote and support marine-related sectors contributing towards the circular economy. This includes implementing the following actions:

- Prohibiting large-scale disturbance of seafloor sediments, such as that currently caused by bottom-contact fishing methods and proposed seafloor mineral extraction.
- Protecting and restoring macroalgal forests by implementing ecosystem-based management of fisheries to restore balance to coastal ecosystems (e.g. by enabling snapper and crayfish populations to increase will likely result in reduction of sea urchin pressure on kelp forests). Other tools include establishing highly protected marine areas (including large no-take areas) and reducing human-caused sediment runoff from land.
- Protecting and restoring tidal wetlands (saltmarsh, seagrass and mangroves) by prohibiting damage to these habitats, allowing inland migration of tidal wetlands with sea level rise, reducing human-caused sediment and nutrient run-off from land to protect vulnerable habitats and implementing policy to facilitate tidal wetland restoration.
- Promoting and supporting marine-based contributions towards a circular economy in Aotearoa New Zealand.

**Recommendation 3:** NZMSS also supports the Plan's reference to future research, and we recommend the priority areas of research relating to emissions reduction in the marine environment outlined in Section 5 of our submission.

**Recommendation 4:** NZMSS invites MfE to engage with us to address the significant gap in this Plan. NZMSS has a panel of experts in marine and climate science who can assist with options and approaches in relation to this emissions reduction plan.

#### **Specific comments**

#### 1. Aotearoa New Zealand's marine environment

Our marine environment is significant in size. The Exclusive Economic Zone (EEZ) covers approximately 420 million hectares, or about 15 times the land area of Aotearoa New Zealand (refer to Figure 1). The extended continental shelf encompasses about 21 times the land area<sup>1</sup>. This hosts a diverse range of ecosystems from the coast to the abyssal depths, along with over 12,800 species<sup>2</sup>.



**Figure 1**: Aotearoa New Zealand's marine environment. Note: EEZ = 12- 200 NM exclusive economic zone (EEZ). Orange border = extended continental shelf covered by the EEZ and Continental Shelf (Environmental Effects) Act 2012. The small triangle-type shapes within the larger EEZ border are international waters. Source: *EPA website.* 

#### 2. Role of the ocean in carbon storage

Recent research has highlighted the essential role that the oceans play in mitigating the effects of climate change. Carbon is captured and sequestered in marine organisms and the seabed.

<sup>&</sup>lt;sup>1</sup> Gordon et al 2010. Marine biodiversity of Aotearoa New Zealand. PLOS One

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0010905.

<sup>&</sup>lt;sup>2</sup> Biodiversity in Aotearoa an overview of state, trends and pressures 2020. <u>https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-2020-biodiversity-report.pdf</u>

The oceans have absorbed heat and carbon dioxide  $(CO_2)$  as global temperatures and  $CO_2$  emissions have risen, which has buffered somewhat the effects of anthropogenic activities on the atmosphere and climate. Higher levels of biodiversity in the ocean can be associated with increased carbon storage through functioning ecosystems<sup>3</sup>.

The carbon storage capacity of offshore shelf sediments, which cover roughly 9% of global marine area, has also received increasing recognition<sup>4</sup>. Marine sediments store more than twice the carbon in the top 1 metre than do terrestrial soils and represent a globally important carbon sink<sup>5</sup>. Most of the carbon-rich sediments (about 75%) are located in abyss/basin areas, and over 50% is within countries' exclusive economic zones. The long-term carbon storage within these areas is vulnerable to remineralisation into CO<sub>2</sub> as a consequence of human activities, which

occur over significant areas of shelf seas<sup>6</sup>.

The contribution of coastal marine vegetation on the ocean carbon cycle has been the subject of ongoing research over the past two decades<sup>7</sup> and is currently a fast-moving field of research. A recent study estimated the organic carbon storage in tidal wetlands (mangroves, salt marsh, seagrasses) in Australia, and calculated that loss of these biodiverse vegetated coastal habitats would result in an increase in emissions of between 12-21% annually<sup>8</sup>. Equally the opportunity of global carbon storage of tidal wetlands if maintained is high, with storage of 138 ± 38 g  $C/m^2/yr$  (equal to 5.1 CO<sup>2</sup>/ha/yr in seagrasses), 218 ± 24 g  $C/m^2/yr$  (equal to 8.0 t CO<sup>2</sup>/ha/yr salt marsh) and 226 ± 39 g  $C/m^2/yr$  (equal to 8.3 t CO<sup>2</sup>/ha/yr in mangroves)<sup>9</sup>. However, carbon sequestration of tidal wetland habitats in Aotearoa New Zealand may be lower (e.g. for salt marsh, Perez et al. 2017<sup>10</sup>) or higher (e.g. for mangroves, Lovelock et al. 2010<sup>11</sup>) than this, based on limited data. In Aotearoa New Zealand, the organic carbon stocks of tidal wetland habitats have been shown to range from 90 t/ha to 27 t/ha<sup>12</sup>, with the overall area of saline wetlands calculated as 47, 018 ha<sup>13</sup>. Notably, the estimates above exclude kelp forests and other seaweeds, which are important marine habitats throughout Aotearoa New Zealand's

<sup>&</sup>lt;sup>3</sup> Sala et al. 2021. Protecting the global ocean for biodiversity, food and climate. Nature 592: 397–402.

<sup>&</sup>lt;sup>4</sup> Diesing et al. 2017. Predicting the standing stock of organic carbon in surface sediments of the North-West European continental shelf. Biogeochemistry 135: 183-220. Luisetti et al. 2019. Quantifying and valuing carbon flows and stores in coastal and shelf ecosystems in the UK. Ecosystem Services 35: 67-76.

<sup>&</sup>lt;sup>5</sup> Atwood et al. 2020. Global patterns in marine sediment carbon stocks. Frontiers in Marine Science doi: 10.3389/fmars.2020.00165

<sup>&</sup>lt;sup>6</sup> Sala et al. 2021. Protecting the global ocean for biodiversity, food and climate. Nature <u>https://doi.org/10.1038/s41586-021-03371-z</u>

<sup>&</sup>lt;sup>7</sup> Duarte et al. 2004. Major role of marine vegetation on the oceanic carbon cycle. Biogeosciences Discussions 1: 659-679. Laffoley, D.d'A. & Grimsditch, G. (eds). 2009. The management of natural coastal carbon sinks. IUCN, Gland, Switzerland.

<sup>&</sup>lt;sup>8</sup> Serrano et al. 2019. Australian vegetated coastal ecosystems as global hotspots for climate change mitigation. Nature Communications <u>https://doi.org/10.1038/s41467-019-12176-8</u>.

<sup>&</sup>lt;sup>9</sup> Mcleod et al. 2011. A blueprint for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO<sub>2</sub>. Front Ecol Environ 2011; 9(10): 552–560, doi:10.1890/110004.

<sup>&</sup>lt;sup>10</sup> Pérez et al. 2017. Changes in soil organic carbon accumulation driven by mangrove expansion and deforestation in a New Zealand estuary. Estuar. Coast. Shelf Sci. 192:108–116. doi: 10.1016/j.ecss.2017.05.009

<sup>&</sup>lt;sup>11</sup> Lovelock et al. 2010. Mangrove forest and soil development on a rapidly accreting shore in New Zealand. Ecosystems 13: 437–451 DOI: 10.1007/s10021-010-9329-2.

<sup>&</sup>lt;sup>12</sup> Bulmer et al. 2020. Blue carbon stocks and cross-habitat subsidies. Front. Mar. Sci. 7:380. doi: 10.3389/fmars.2020.00380.

<sup>&</sup>lt;sup>13</sup> Dymond et al 2021. Revised extent of wetlands in New Zealand. New Zealand Journal of Ecology 45(2): 3444.

coastline, and have been estimated to sequester between 4000 and 1.5 million tons of carbon per year in different parts of the world<sup>14</sup>.

Carbon storage timeframes vary with the type of carbon sink. For example, soil organic carbon in tidal wetlands can be sequestered for very long periods (centuries to millennia<sup>15</sup>). Carbon within individual living organisms is sequestered for shorter periods (e.g. for seaweeds - up to a decade), but storage can be sustained over time by maintaining populations. Carbon originating from marine organisms such as seaweeds also has potential to be sequestered for longer periods (e.g. up to thousands of years) in seafloor sediments or the deep ocean<sup>16</sup>.

#### 3. Impacts of human activities on marine carbon storage and emissions reduction.

#### Human impacts and opportunities overview

The ability to capture carbon is being directly affected by the way we currently use our marine environment. For example, carbon-rich sediments are frequently disturbed over significant areas by fishing activities such as bottom trawling and port-related dredging activities in some areas of the coastal zone, and international research has shown (refer to details in the following section) that carbon stores can be remineralised back into seawater, exacerbating the effects of climate change and ocean acidification.

In 2019, the 14 member nations of the High Level Panel for a Sustainable Ocean Economy<sup>17</sup> issued an expert report on the mitigation potential of a suite of ocean-based activities and the potential future contribution from carbon storage<sup>18</sup>. It was identified that the ocean naturally contains nearly 150,000 GtCO<sub>2</sub>e, which dwarfs the 2,000 GtCO<sub>2</sub>e in the atmosphere and 7,300 GtCO<sub>2</sub>e in the land-bqa biosphere.

The panel assessed a number of ocean-based interventions and selected mitigation options for their potential contribution towards reducing emissions and enhancing the ocean's ability to store carbon more effectively. These included: ocean-based renewable energy; ocean-based transport; emissions from fishing vessels; emissions from aquaculture; increasing ocean-based proteins in human diets; recovery of biodiversity and biomass; restoration and protection of 'blue carbon sinks' (mangroves, salt-marsh, seagrasses); seaweed production; and carbon storage in the seabed (refer to Appendix 1).

The panel found that, should more ecologically sustainable activities and management occur over time, the ocean could contribute an estimated 6% to 25% reduction in emissions needed

by 2050 to achieve the 1.5 °C reduction in global temperatures called for under the Paris Agreement. While there were a number of caveats to the analysis; nevertheless a compelling

<sup>&</sup>lt;sup>14</sup> Eger et al 2021. The economic value of fisheries, blue carbon, and nutrient cycling in global marine forests. EcoEvoRxiv.

<sup>&</sup>lt;sup>15</sup> Duarte et al. 2005. Major role of marine vegetation on the oceanic carbon cycle. Biogeosciences, 2, 1–8. Lo Iacono et al. 2008. Very high-resolution seismo-acoustic imaging of seagrass meadows (Mediterranean Sea): Implications for carbon sink estimates. Geophysical Research Letters, 35.

<sup>&</sup>lt;sup>16</sup> Paine et al 2021. Rate and fate of dissolved organic carbon release by seaweeds: A missing link in the coastal ocean carbon cycle. Journal of Phycology. doi:10.1111/jpy.13198

<sup>&</sup>lt;sup>17</sup> https://www.oceanpanel.org/. Member Nations: Australia, Canada, Chile, Fiji, Ghana, Indonesia, Jamaica, Japan, Kenya, Mexico, Namibia, Norway, Palau, Portugal, and the United Nation's Special Envoy for the Ocean.

<sup>&</sup>lt;sup>18</sup> Hoegh-Guldberg et al. 2019. "The Ocean as a Solution to Climate Change: Five Opportunities for Action". World Resources Institute. Washington DC. Available online at <u>http://www.oceanpanel.org/climate</u>.

and urgent argument was made that policy to mitigate climate change needs to specifically account for activities on and within the ocean.

On the other hand, if the ocean continues to absorb more  $CO_2$  and becomes more acidic, this will reduce its ability to buffer climate change, disrupt ecosystems, and increase food insecurity. In this respect, as a consequence of human activities, approximately 10 billion tonnes of  $CO_2$ , or about 25 to 30 % of anthropogenic  $CO_2$  emissions, enters the ocean (Global Carbon Project 2018).

*Further details of human impacts (including in context of Aotearoa New Zealand)* Physical disturbance of seafloor sediments causes resuspension into the water column, leading to exposure to oxygen and heterotrophic metabolism that can result in remineralisation<sup>19</sup>, exacerbating the effects of climate change and ocean acidification. For example, a recent study in the Mediterranean compared carbon storage in trawled and untrawled deep-water areas, finding that continuous erosion and sediment mixing in trawled areas led to an approximately 30% loss of organic carbon and a 52-70% loss of labile compounds through degradation<sup>20</sup>. Such disturbance of marine sediments occurs on a significant scale in Aotearoa New Zealand, with over 335 million ha exposed to bottom-contact fishing methods between 1990-2016<sup>21</sup>. These frequent and intense disturbances also contribute to ocean acidification, a significant threat to Aotearoa New Zealand's marine ecosystems<sup>22</sup>.

Land use activities are also resulting in damage to coastal vegetation by the smothering of seagrass, limiting light for benthic primary producers such as kelp forests, and loss of shellfish beds from excessive terrigenous sedimentation<sup>23</sup> (Figure 2). The ongoing adverse effects on coastal ecosystems are likely to be exacerbated by future clearfell harvesting of radiata pine, planted on marginal hill country to mitigate climate emissions and stem erosion as well as use of intensified agricultural practices that require high fertiliser inputs. On coastal margins, degradation of tidal wetland habitats can have deleterious consequences for climate mitigation. For example, drained salt marsh can emit greenhouse gases including carbon dioxide and methane<sup>24</sup>.

Productivity and carbon storage of coastal ecosystems in Aotearoa New Zealand is also indirectly impacted by fishing. For example, decades of research on coastal reefs have shown that fishing has led to a shift from highly productive kelp forests to barren landscapes dominated by sea urchins<sup>25</sup> (Figure 3). Furthermore, new research has shown that increases in the

 <sup>&</sup>lt;sup>19</sup> For example, as described in Bianchi et al. 2016. Redox effects on organic matter storage in coastal sediments during the Holocene: a biomarker/proxy perspective. Annual Review of Earth and Planetary Sciences 44: 295–319.
 <sup>20</sup> Paradis et al. 2021. Persistence of biogeochemical alterations off deep-sea sediments by bottom trawling. Geophysical Research Letters, 48, e2020GL091279. https://doiorg/10.1029/2020GL091279.

<sup>&</sup>lt;sup>21</sup> Ministry for the Environment and Statistics New Zealand. 2019. Our Marine Environment.2019. New Zealand's Environmental Reporting Series. NZ Government.

<sup>&</sup>lt;sup>22</sup> MacDiarmid et al. 2012. Assessment of anthropogenic threats to New Zealand marine habitats. New Zealand Aquatic Environment and Biodiversity Report No. 93. Ministry for Primary Industries, Wellington, NZ. 255p.

<sup>&</sup>lt;sup>23</sup> Thrush 2004. Muddy waters: elevating sediment input to coastal and estuarine habitats. Frontiers in Ecology and the Environment, 2(6): 299–306.

<sup>&</sup>lt;sup>24</sup> Kroeger et al 2017. Restoring tides to reduce methane emissions in impounded wetlands: A new and potent Blue Carbon climate change intervention. Scientific reports, 7(1), 1-12.

<sup>&</sup>lt;sup>25</sup> Shears, Babcock 2003. Continuing trophic cascade effects after 25 years of no-take marine reserve protection. Marine Ecology Progress Series, 246, 1–16.

frequency and magnitude of marine heatwaves, as a result of climate change, can further weaken the resilience of coastal ecosystems to local stressors and, in some cases, remove coastal vegetation all together<sup>26</sup>. This loss of coastal vegetation has vast implications for carbon storage.

Effective management of fishing and land practices can therefore greatly increase the contribution of marine ecosystems to carbon sequestration.



Figure 2: (Left) Terrigenous sediment dump smothered a carbon-sequestering seagrass bed in an estuary. Photo credit: Michele Wilkinson. (Right) Sediment discharge into Pelorus/Te Hoiere Sound after an estimated 1 in 3.1 year rainfall event in July 2018. Photo credit: Ben Knight.

<sup>&</sup>lt;sup>26</sup> Smale 2020. Impacts of ocean warming on kelp forest ecosystems. New Phytologist 225(4): 1447-1454.



Figure 3: An urchin barren (Left) and kelp forest (Right) in the Hauraki Gulf. Photo credit: Nick Shears.

#### 4. Marine-related emissions reductions solutions for Aotearoa New Zealand

#### Nature-based solutions and management tools

We support the concepts of nature-based solutions and environmental protection already embedded within guiding principles for Government decisions on emissions reduction (in the Plan, Table 5 on page 20). However, we wish to highlight the crucial role that the marine environment can play in respect to this. This relates to the human activities that threaten marine carbon storage described in the previous section. Various management tools used to protect and or restore marine carbon sinks are available to enable implementation of these nature-based solutions (see Table 1 for examples). We note that some of these management tools align with the recommendation in the Climate Change Commission's 2021 report<sup>27</sup> around preventing further loss of carbon from organic soils, particularly due to the degradation of drained peatlands and the destruction of wetlands. Given that some of the management tools in our submission relate to fishing and other marine-based primary activities, we suggest that the 'Agriculture and Forestry' category in the Plan be expanded to include 'Marine-Based Primary Industries' or similar wording.

Advancement of technology or knowledge is not required to implement these management tools, although future research could offer improvements in this space. In terms of economic feasibility, a recent economic analysis of the nature and extent of bottom trawling in Aotearoa New Zealand has indicated that the economic costs of transitioning [to alternative methods of fishing for demersal species] would be significant, but that the costs would diminish over time as fishers became more efficient at using different fishing methods<sup>28</sup>. There is also existing legislation that enables the implementation of most (potentially all) of these management tools. In some cases, however, the legislation could benefit from being strengthened in this respect. For example, estuaries (and coastal wetlands) could be fully integrated within freshwater management units in the National Policy Statement for Freshwater Management to require

<sup>&</sup>lt;sup>27</sup> Recommendations from Ināia tonu nei: a low-emissions future for Aotearoa.

https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa/

<sup>&</sup>lt;sup>28</sup> Cox et al 2021. An economic analysis of bottom trawling in New Zealand November 2021. Report for the The Ministry for Primary Industries (MPI) provided by the Business and Economic Research Limited (BERL). Report released under the Official Information Act 1982.

councils to limit terrestrial impacts on coastal ecosystems<sup>29</sup>. Coastal wetlands could also be specified as a key ecosystem to protect within The New Zealand Coastal Policy Statement (Policy 11). The Government could also implement policy for highly protected marine areas of the EEZ.

Any lack of local estimates of carbon storage and emission reduction from these marine naturebased solutions should not prevent these tools being implemented now. We note that 'managing risk and uncertainty' is already an inherent part of the emissions reduction plan and the New Zealand Coastal Policy Statement also outlines situations where a precautionary approach should be adopted.

As recognised as a risk in the Plan (e.g. page 119), we stress that nature-based solutions (including those relating to the marine environment) should not be seen as a substitute for reducing gross emissions in other sectors. We also understand that, due to policy wording, some of the marine nature-based solutions for reducing emissions may not currently be able to contribute to meeting Aotearoa New Zealand's international climate obligations under the Paris Agreement. However, New Zealand's Nationally Determined Contributions document (dated November 2021) does state that '*New Zealand looks forward to considering methodologies introduced by the 2013 IPCC Wetlands Supplement<sup>30</sup> and the 2019 Refinement to the 2006 IPCC Guidelines<sup>31</sup> in the future', noting that wetlands were defined to encompass 'coastal wetlands including mangrove forests', 'tidal marshes' and 'seagrass meadows'. Regardless, given the magnitude of carbon that is (and can be) stored in marine systems, marine nature-based solutions are a powerful tool that should be used to contribute to addressing the global climate crisis.* 

Co-benefits are an important advantage of nature-based solutions, given that other crises (such as biodiversity loss) are occurring alongside climate change. The many co-benefits of marine nature-based solutions relate to the environment, society, culture and economy. There can also be positive feedback loops between co-benefits and climate resilience, for example high biodiversity can mitigate the impact of ocean acidification<sup>32</sup>.

<sup>&</sup>lt;sup>29</sup> Managing Our Estuaries 2020. Parliamentary Commissioner for the Environment. <u>https://www.pce.parliament.nz/media/197063/report-managing-our-estuaries-pdf-44mb.pdf</u>

<sup>&</sup>lt;sup>30</sup> 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.

<sup>&</sup>lt;sup>31</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

<sup>&</sup>lt;sup>32</sup> Rastelli et al. 2020. A high biodiversity mitigates the impact of ocean acidification on hard-bottom ecosystems. Scientific Reports 10:2948 https://doi.org/10.1038/s41598-020-59886-4 1

Table 1: Overview of nature-based solutions for the marine environment including ecosystem type (andcarbon sink) and management type and tools. This is a high-level summary; NZMSS can providefurther details upon request.

| Ecosystem type  | Management Type  | Management Tools   |
|---|--|--|
| (Carbon sink)   | Protect an existing<br>carbon sink and/or<br>restore one | Examples only  |
| Ocean seafloor<br>(sediments)   | Protect and/or<br>restore                                | Prohibit large-scale disturbance of seafloor sediments, such as<br>that currently caused by bottom-contact fishing methods and<br>proposed seafloor mineral extraction.  |
| Macroalgal forests<br>and other marine<br>communities<br>(living biomass, but<br>also some likely to be<br>sequestered in ocean<br>sediments) | Protect and/or<br>Restore                                | Implement ecosystem-based management of fisheries stocks<br>to restore balance to coastal ecosystems, e.g., increasing<br>snapper and crayfish populations to reduce sea urchin<br>pressure on kelp forests.                 |
|   |  | Implement highly protected marine areas e.g. larger area of no-take.<br>Reduce human-caused sediment runoff from land.   |
| Tidal wetland<br>habitats e.g. salt<br>marsh, mangrove and<br>seagrass.<br>(living biomass and<br>soil carbon)                                | Protect  | Prohibit damage to/destruction of tidal wetland habitats.<br>Allow inland migration of tidal wetlands with sea level rise.<br>Reduce human-caused sediment and nutrient run-off from<br>land to protect vulnerable habitats. |
|   | Restore  | Implement policy to facilitate tidal wetland restoration (e.g. through re-wetting, re-vegetation etc.).  |

#### Contributing towards a circular economy

In section 'Moving Aotearoa to a circular economy' (page 48), the Plan promotes a circular economy operating within planetary boundaries. We therefore identify various marine-related solutions in Aotearoa New Zealand that can (and do already) contribute towards this goal:

• Sustainable aquaculture has an important role to play, especially in the production of protein<sup>33</sup>. Regarding the Plan, and as previously mentioned, we therefore recommend that the 'Agriculture and Forestry' category be extended to include 'Marine-Based Primary Industries' which include aquaculture.

<sup>&</sup>lt;sup>33</sup> https://www.oceanpanel.org/ . Member Nations: Australia, Canada, Chile, Fiji, Ghana, Indonesia, Jamaica, Japan, Kenya, Mexico, Namibia, Norway, Palau, Portugal, and the United Nation's Special Envoy for the Ocean.

- In terms of the energy sector, increasing the number of options available for renewable energy production could help the energy sector move away from fossil fuels. Offshore wind energy technology is already used overseas<sup>34</sup> and therefore is relevant for inclusion within the Plan (especially within the timeframe of 15 years covered by the Plan). Marine-generated energy, such as from tides and ocean waves, requires further research and development (see following section) but could be viable within relevant timeframes. In relation to energy, we also note that allowing future oil and gas extraction would not align with the concept of a circular economy defined in the Plan as 'an economic system based on designing out waste and pollution, reusing products and materials, and regenerating natural systems'.
- Within relevant timeframes, there may also be other ways that the marine environment can contribute to the circular economy in other sectors outlined in the Plan. For example, in the waste sector (besides fisheries biomass already included in the Plan) the use of seaweeds to create bioplastic<sup>35</sup> could help with decarbonising plastic.

As part of the Plan, Government should therefore undertake actions to promote and support the above contributions towards a circular economy in Aotearoa New Zealand. This aligns with other intentions, for example the Government's Aquaculture Strategy.

#### 5. Recommended future research science and innovation

NZMSS supports investment into research as outlined by the Plan in the Research, Science and Innovation section (page 42). In relation to emissions reduction in the marine environment, we recommend that research is urgently undertaken to:

- Quantify the mass balance of carbon stored in the marine environment, e.g. for the purpose of reducing uncertainty in emissions reduction estimates.
- Advance technology or knowledge where needed to improve/support management tools for marine nature-based solutions.
- Advance technology or knowledge that further contributes to developing a circular economy. For example, in relation to sustainable aquaculture, renewable energy (e.g., wave and tidal) production and waste-related options.

#### 6. Summary

NZMSS supports the work done by MfE to draft the emissions reduction plan. However, we identify a significant gap and call on MfE to include the marine environment and relevant management actions in the final Plan to mitigate greenhouse gas emissions, as follows:

<sup>&</sup>lt;sup>34</sup> Hoegh-Guldberg et al. 2019. "The Ocean as a Solution to Climate Change: Five Opportunities for Action". World Resources Institute. Washington DC. Available online at http://www.oceanpanel.org/climate.

<sup>&</sup>lt;sup>35</sup> Lim et al. 2021. Bioplastic made from seaweed polysaccharides with green production methods. Journal of Environmental Chemical Engineering, 9(5), 105895. doi:10.1016/j.jece.2021.105895

- **Urgency**: Emissions reduction is urgently needed to limit global warming below 1.5 degrees. The oceans are in trouble, and are warming, rising, and acidifying. Marine ecosystems and biodiversity are under threat from cumulative and multiple stressors.
- **Relevance**: The ocean has great capacity to sequester and store carbon, far in excess of terrestrial environments. The marine environment can also contribute towards a circular economy in relation to sectors such as food production, energy and waste.
- **Management**: Human activities on land and in the ocean are directly impacting on the carbon storage and retention capacity of the marine environment. These activities are avoidable and management tools must be implemented to protect and restore marine carbon sinks. There are also marine-related opportunities for contributing towards a circular economy.

#### **NZMSS recommendations**

**Recommendation 1:** NZMSS recommends that MfE's emissions reduction plan be revised to recognise the crucial role of the Aotearoa New Zealand's marine domain in emissions reduction. Regarding the Plan, we therefore recommend that the 'Agriculture and Forestry' category be extended to include 'Marine-Based Primary Industries' or similar wording.

**Recommendation 2:** That the Government acts urgently to protect and restore vital marine carbon sinks and to promote and support marine-related sectors contributing towards the circular economy. This includes implementing the following actions:

- Prohibiting large-scale disturbance of seafloor sediments, such as that currently caused by bottom-contact fishing methods and proposed seafloor mineral extraction.
- Protecting and restoring macroalgal forests by implementing ecosystem-based management of fisheries to restore balance to coastal ecosystems (e.g. by enabling snapper and crayfish populations to increase will likely result in reduction of sea urchin pressure on kelp forests). Other tools include establishing highly protected marine areas (including large no-take areas) and reducing human-caused sediment runoff from land.
- Protecting and restoring tidal wetlands (saltmarsh, seagrass and mangroves) by prohibiting damage to these habitats, allowing inland migration of tidal wetlands with sea level rise, reducing human-caused sediment and nutrient run-off from land to protect vulnerable habitats and implementing policy to facilitate tidal wetland restoration.
- Promoting and supporting marine-based contributions towards a circular economy in Aotearoa New Zealand.

**Recommendation 3:** NZMSS also supports the Plan's reference to future research, and we recommend the priority areas of research relating to emissions reduction in the marine environment outlined in Section 5 of our submission.

**Recommendation 4:** NZMSS invites MfE to engage with us to address the significant gap in this Plan. NZMSS has a panel of experts in marine and climate science who can assist with options and approaches in relation to this emissions reduction plan.

Appendix 1: Assessment of ocean-based climate action. From: Hoegh-Guldberg et al. 2019. "The Ocean as a Solution to Climate Change: Five Opportunities for Action". World Resources Institute. Washington DC. <u>http://www.oceanpanel.org/climate</u>.

| AREAS OF OCEAN-BASED CLIMATE ACTION   | 2030 MITIGATION<br>POTENTIAL (GTCO <sub>2</sub> E/YEAR) | 2050 MITIGATION<br>POTENTIAL (GTCO <sub>2</sub> E/YEAR) |
|---|---|---|
| 1. Ocean-based renewable energy   | 0.18-0.25   | 0.76–5.40   |
| 2. Ocean-based transport  | 0.24 - 0.47   | 0.9 - 1.80  |
| 3. Coastal and marine ecosystems  | 0.32-0.89   | 0.50-1.38   |
| 4. Fisheries, aquaculture, and dietary shifts   | 0.34-0.94   | 0.48-1.24   |
| 5. Carbon storage in the seabed (Action in this Area Requires<br>Further Research Prior to Implementation at Scale) | 0.25-1.0  | 0.50-2.0  |
| Total   | 1.32-3.54   | 3.14-11.82  |
| Total percentage contribution to closing emissions gap<br>(1.5°C pathway)   | 4–12 %  | 6-21%   |
| Total percentage contribution to closing emissions gap (2°C pathway)  | 7–19%   | 7–25%   |

Table ES-1. Summary of Global Mitigation Potential Offered by Each Area of Ocean-based Climate Action

Source: Authors



Figure 7. Linkage Scores of Ocean-based Interventions and Selected Mitigation Options across the Wider Impact Dimensions

#### Source: Authors

Notes: Wider-Impact dimensions cover various sustainable development dimension as well as 2030 Sustainable Development Goals (SDG). The figure shows the relative strength of the relationship between a selected set of ocean-based mitigation options and the SDGs. For each mitigation option, the positive linkage score with a particular SDG (depicted with solid bars) is shown in the right-hand column and negative linkage score (depicted by shaded bars) in the left-hand column. Scores range from +3 (indivisible) to -3 (cancelling) (Nilsson et al. 2016). A zero score (no bar and no colour) means no impact was found in this review of the literature. Each colour represents a particular wider impact dimension: Red bars for economy (SDG 7, 8, 9, 11); blue bars for environment (SDG6, SDG12, SDG14, SDG15); yellow bars for society (SDG1, SDG2, SDG3, SDG4, SDG5, SDG10) and green bars for Governance (SDG 16, SDG 17). Further Information on the linkage scores and the associated confidence levels are provided in the Annex.



## **Submission**

of the

# New Zealand Union of Students' Associations

on

Te hau mārohi ki anamata: *Transitioning to a low-emissions climate-resilient future* 

| Prepared by             |
|-------------------------|
| National Vice President |
|                         |
|                         |
|                         |



| То      | Ministry for the Environment  |  |
|---------|---|--|
| From    | New Zealand Union of Students' Associations (NZUSA)                                 |  |
| Date    | 24 November 2021  |  |
| Subject | Te hau mārohi ki anamata: Transitioning to a low-emissions climate-resilient future |  |

## 1. Introduction

1.1. The New Zealand Union of Students' Associations ("NZUSA") would like to thank you for the opportunity to make a written submission on Te hau mārohi ki anamata: *Transitioning to a low-emissions climate-resilient future*. NZUSA would also like the opportunity to make an oral submission.

## 2. Background

- 2.1. The New Zealand Union of Students' Associations (NZUSA) is the national voice of students in tertiary education. We are proudly owned by students' associations and councils from universities, institutes of technology and polytechnics around the country. We work alongside our partner organisations Te Mana Åkonga (National Māori Tertiary Students' Association), Tauira Pasifika (National Pasifika Tertiary Students' Association) and the National Disabled Students' Association (NDSA) to fight for a barrier-free education for all.
- 2.2. NZUSA's members are:
  - Albany Students' Association (ASA)
  - Association of Students at Universal College of Learning (AS@U)
  - Auckland University Students' Association (AUSA)
  - Lincoln University Students' Association (LUSA)
  - Massey@Distance (M@D)
  - Massey Wellington Students' Association (MAWSA)
  - Massey University Students' Association (MUSA)
  - Otago University Students' Association (OUSA)



- Students' Association at Nelson Marlborough Institute of Technology (SANITI)
- Students' Association at Wintec (SAWIT)
- Student Connection at Weltec & Whitireia
- Unitec Student Council (USC)
- Victoria University of Wellington Students' Association (VUWSA)
- Younited Students' Association at Eastern Institute of Technology

## 3. Preamble

- 3.1. NZUSA wholeheartedly supports Te hau mārohi ki anamata: *Transitioning to a low-emissions and climate-resilient future*. This consultation document serves as a key opportunity for organisations and everyday New Zealanders to have their say on the Governments future action in response to climate change.
- 3.2. It cannot go understated the enormous impact climate change has and will continue to have on the world. The greatest impacts of this crisis will be felt in regions that do not have the material means to fight the battle alone, and New Zealand alongside other wealthier nations in the Pacific, have a responsibility to lead the change and support efforts to counteract the effects of rising global temperatures.
- 3.3. NZUSA strongly believes that transitioning to a low-emissions climateresilient future must involve all communities, organisations, unions, and education providers as every facet of society provides a different but crucial lens in a nation's response. NZUSA has, and will continue to say, that education is the most important tool in a just-transition. A justtransition cannot be accounted for if *most* of the population is unaware of how they can contribute toward lowering emissions, or if the majority of a population is not adequately resourced to make changes.
- 3.4. In our submission, we will not be covering all the contents from the consultation document, rather, aspects we are most familiar with and engage in/with regularly. These are:
  - 3.4.1. Transition pathway
    - 3.4.1.1. Working with Te Tiriti Partners
    - 3.4.1.2. Making an equitable transition
  - 3.4.2. Planning
  - 3.4.3. Behaviour change



- 3.4.4. Transport
- 3.4.5. Energy
- 3.5. We would like to acknowledge the mahi of He Pou a Rangi (The Climate Change Commission) and the Government who have, since 2019, committed to taking serious action on climate change. We ask that the first Emissions Reduction Plan (ERP) take into account all perspectives and that it sets out a strong policy and action-based plan for tackling climate change.

## 4. Submission

## 4.1. Transition Pathway

- 4.1.1. A fair, equitable and inclusive transition is one that involves the voices of all and takes a Te Tiriti lens. It is important for us to note at the start that the Government needs to do a better job at engaging with Māori and acknowledging Tangata Whenua as the key to ensuring a just transition in Aotearoa. The current fight against climate change does not consider all communities, and a willingness and plan to change this needs to be clearly articulated in the first ERP.
- 4.1.2. Moreover, students studying within the tertiary sector are important stakeholders in the fight against climate change. We are already seeing tertiary providers working to include sustainability and environmental based courses and material into existing qualifications ranging from engineering, through to business and the arts. In a recent milestone, the Auckland University of Technology launched their 'Sustainability Roadmap' report whereby they set out several targets that range from embedding sustainability into teaching and learning, right through to research and projects focused on the discovery and application of knowledge for wellbeing and prosperity. AUT's roadmap provides a strong action-based plan on tackling climate change within their institution and sets a precedent within the tertiary sector for others to follow<sup>1</sup>.
- 4.1.3. NZUSA has made it clear in all climate-focused conversations that education is the best tool to use in a just transitions. It is crucial that people, from as young as primary school age, learn about sustainability and the effects our current actions have on rising

<sup>&</sup>lt;sup>1</sup> AUT (2021) <u>https://www.aut.ac.nz/about/social-responsibility/sustainability-at-aut/sustainability-roadmap</u>



global temperatures. Education, specifically at tertiary level, not only provides a pathway for research into potential countermeasures but also prepares graduates - sending them into industries with an appreciation for what needs to be done to change and how to go about doing so.

4.1.4. We are seeing the tertiary sector acknowledging climate change and what role it can play more broadly. However, for the sector to enable change it must be resourced. An example of this comes from the University of Canterbury where they are the first in New Zealand to appoint a Deputy Vice-Chancellor, Sustainability<sup>2</sup>. In doing so, Canterbury will be able to focus on becoming a carbon neutral institute by 2030 - having been provided with \$2.16 Million in resourcing to do so. NZUSA strongly believes such a position should be present on all campuses, with similar resourcing targeted at providers to make changes.

### 4.2. Planning

- 4.2.1. While we acknowledge that legislative changes such as the proposed Natural and Built Environments Act, Strategic Planning Act, and Climate Adaption Act provide a better alternative to the current Resource Management Act, central government needs to work closely with councils and local community groups regularly. Working *with* does not mean implementing legislation or processes that the Government *thinks* is appropriate; rather, they must work in partnership with local entities in drafting and eventually implementing regulation to ensure fair transitions particularly within more rural and provincial communities.
- 4.2.2. Within our main centres, urban planning and development is shifting toward an increasingly more urban-centric model; building up, rather than out. Councils, despite the national direction on urban development, in all areas across Aotearoa need to be resourced to design spatial plans that pave the way for cleaner transport alternatives, housing and community development. Moreover, when designing spatial plans, councils need to be thinking about lower income earners, which include

<sup>&</sup>lt;sup>2</sup> University of Canterbury (2021) <u>https://www.canterbury.ac.nz/news/2021/new-role-at-uc-to-deliver-on-sustainability-goals.html</u>



students, and what modes of living and transport best suit their needs. We will discuss more about this in sub clause 4.4.

## 4.3. Behaviour Change - Empowering Action

- 4.3.1. NZUSA welcomes the Government's pledge in identifying behaviour change as a means of transitioning to a climate-resilient future. Noted in the consultation document is the CCC's recommendation that education and information is a key tool in promoting behaviour change (pg. 47). Education, at all levels, must be used to promote the importance of living sustainably and what actions can be taken from all generations to enable change.
- 4.3.2. As we noted in 4.1.2, tertiary providers and students must be key stakeholders in the fight against climate change. We were disappointed to see that the consultation document fails to identify education providers as a solution to enabling behaviour change. We are seeing many examples of how sustainability can be taught and embedded within institutions, and their mahi in this space like academia as a whole must be taken seriously and be used in a way that effectively critiques societal climate action.
- 4.3.3. The education sector is capable of playing an integral part in implementing sustainable teaching and practices within their pedagogies, as well as leading by example and using their influence within communities to aid in just transitioning.

## 4.4. Transitioning Key Sectors

- 4.4.1. <u>Transport</u>
  - 4.4.1.1. Out of the Government's plans in transitioning key sectors, transport is the only one that sets our tangible steps to achieve its ambitions.
  - 4.4.1.2. Transport is one of the biggest contributors to New Zealand's greenhouse gas emissions, and in the consultation document we believe that the Government has succeeded in setting out clear expectations in reducing transport emissions - backed by effective actions. Some of these actions (pg. 56) include *regulations* (transport, laws, rules standards), investment and and fundina (Government's Policy Statement on Land Transport setting out the Government's objectives for land transport investment, and Crown funding for transport initiatives), and *behaviour change tools* (public communication



campaigns and the recognition of barriers - often a lack of good transport alternatives).

- 4.4.1.3. Calling on local government to improve transport alternatives for low-income earners has been adopted as an ongoing campaign focus by student unions and community groups. Throughout 2021, student associations in Canterbury, Wellington and Auckland pushed for discounted or free fares for students and community card holders in their regions. Reducing the price of public transport and the subsequent impact that would have on reducing emissions and barriers cannot be underestimated and must be a factor when developing transport solutions in the ERP.
- 4.4.1.4. Providing communities with cheaper and accessible modes of transport not only removes barriers but encourages cleaner alternatives to single-use vehicles and reduces overall road usage. It is important to note that when considering future policies and actions on transport, all regions must be considered. A 2020 research piece conducted by Massey University noted that between 2015-18, travel by private vehicle accounted for 79.9% of the time New Zealanders travelled to work<sup>3</sup>. It was from this report that Wellington, as early as 2010-14, had been identified as the regions with the highest rate of active or public transport use (23.9%). Regions such as the Bay of Plenty, Northland and the Westcoast had significantly lower active or public transport use (less than 5%). Public transport alternatives in rural and provincial regions are significantly lower than in the main centres, meaning focus and consultation must be applied strongly in these parts of Aotearoa.
- 4.4.2. <u>Energy</u>
  - 4.4.2.1. The Government's priority for Kiwi's having access to affordable and reliable energy within the consultation document is ambitious. We found that there is more focus on setting up one panel of experts, after another to simply

<sup>&</sup>lt;sup>3</sup> Massey University (2020) <u>https://www.ehinz.ac.nz/indicators/transport/main-mode-of-transport-to-work/</u>



identify energy hardship rather than providing practical actions within the current consultation document and committing to solutions. Unlike transport, there is no table that outlines goals and targets and the chapter in transitioning the energy sector does not set tangible objectives that will deliver on promises.

4.4.2.2. Every New Zealander deserves to live in a warm dry home. Ramping up building standards and improving rental home standards through the RTA is one thing, but ensuring energy is affordable for lower income earners needs more focus. It is crucial that when the Energy Hardship Expert Panel is established, all communities be engaged in discussions from the beginning and that the Energy Hardship Reference Group (EHRG) serves as a space for those communities to collaborate and inform decisions. The EHRG must be made up of a variety of energy consumers, both high and low-income earners, and students - who make up for about 7% of New Zealand's population and take up a bulk of the rental market in centres with tertiary institutes.

### 5. Conclusion

- 5.1. Overall NZUSA welcomes the consultation document as a means to effectively inform final decisions made regarding the Emissions Reduction Plan ERP. We cannot overstate that students and the wider tertiary sector must be engaged with in informing on decisions made in transitioning to a carbon-neutral resilient-future. Education is the greatest tool we have to counteract the effects of climate change, not only in the form of research, but with its ability to inform and shift peoples' views from a young age.
- 5.2. Moreover, the Government must work with all sectors, including unions, to ensure every voice is heard and that no one is disproportionately affected; which is the unfortunate reality for many. A just transition is one that takes a holistic lens and accounts for all voices as change affects everyone and will continue to disproportionately affect our most vulnerable if their voices are not heard.

## Submission by Oji Fibre Solutions (NZ) Limited: Transition to a Low-Emissions and Climate-Resilient Future

| То:        | Emissions Reduction Plan Consultation, Ministry for the Environment<br>Submission lodged via email:<br><u>climateconsultation2021@mfe.govt.nz</u> |
|------------|---|
| Submitter: | Oji Fibre Solutions (NZ) Limited  |
|            |   |
| Address:   | Private Bag 92106<br>Auckland 1142  |
| Date:      | 24 November 2021  |

**Consent to Release:** Oji FS consents to publishing this submission on the consult-environment website.

## Summary

Oji Fibre Solutions (Oji) operates in NZ's wood products sector, encompassing forest growing, pulp, paper, sustainable packaging and paper recycling. Oji is investing in the bio-economy and is committed to natural, renewable and recyclable products. We believe our activities can play an important part in NZ's future low carbon economy.

The Discussion Document covers a comprehensive range of issues, building on the recommendations of the Climate Change Commission. Our submission repeats much of submission made to the Commission in March by Oji and Pan Pac Forest Products Itd.

A summary of our submission is listed below:

- The proposed carbon budgets are ambitious, and consistent with Oji's values. However, without careful management of the economic transformation, they could lead to competitiveness risks, which could damage the very parts of the economy the Government wants to nurture.
- Oji supports the call for a plan for the bio-economy. We believe there are significant opportunities to build on the wood and fibre infrastructure that is already in place. Production forestry needs to be considered key to a renewed economy, rather than merely as a temporary emissions sink.
- A plan for the bio-economy, combined with policies to build low-emission homes, must incentivise wood processing in New Zealand. Without such policies this sector is at risk of losing investment opportunities to our competitors overseas.

- Oji supports a National Energy Strategy and broad renewables targets. An opportunity currently exists to develop a large-scale bio-energy centre based at the Kinleith Mill, but this project has a high risk of not proceeding without supportive policies.
- Although the Emissions Trading Scheme (ETS) remains the central policy for incentivising emissions reductions, we agree the scheme has short-comings and support calls for complementary measures. Oji believes the best approach to complement the ETS is to adopt policies that directly attract investment at scale in our low-carbon industrial sector.

Oji also has serious concerns with two measures that have already been proposed: the intent to phaseout fossil fuels via a National Environmental Standard under the Resource Management Act; and the proposal to review industrial allocation under the ETS. We have made submissions on both so will not repeat our comments here, other than to reiterate that the proposals could discourage investment in our business and damage growth in the bio-economy.

## Our Submission in Detail

### Land and Forestry

Oji has significant investments in most aspects of New Zealand's forestry and wood products sectors. It is from that vantage point and perhaps counter-intuitively, we agree that the country cannot longer rely on forests sinks to meet its climate change targets. Instead we submit that production forests will remain an important feedstock for NZ's low-emissions economy. These forests need to be clearly distinguished from the 'stop-gap' measure of so-called 'carbon forests'.

Oji's position is that future forest crops can be used to gain value from appropriate land-use and to develop New Zealand's low-carbon manufacturing sector. For example, pruned tree crops are not necessarily aligned with maximising short-term carbon sequestration but are a point of difference for higher value lumber exports compared to log exports and therefore provide an opportunity for maximising the value for the economy. Similarly, the production of cellulose products (e.g. for sustainable packaging) is likely to create higher value than simply burning wood for industrial heat.

New Zealand's current policy approach has resulted in a substantial volume of our annual log harvest being exported in raw form. A consequence has been declining investment in on-shore processing of NZ-grown logs coupled with a loss of the intellectual capacity and domestic integration from which to build this low-carbon and high-productivity sector.

Oji supports plans to develop the bio-economy, and we encourage the Government to compare NZ's policy settings with those of other countries with modern wood products sectors. Some countries have sought to maximise the environmental benefits of forestry and wood products by directly encouraging investment, recognising the value of the low embodied emissions and 'circular' benefits of wood, sustainable packaging and biofuels. Many of these overseas policies create serious competitiveness risks for the New Zealand sector.

#### **Industry and Power**

Wood processing activities are energy intensive. However, a substantial amount of this energy is already met from renewable resources. For example, nearly 80% of the energy used at Oji 's operations are renewable, based on wood-residues, lignin and geothermal steam.

Competitive energy prices are crucial for the New Zealand Industrial sector. In our experience, recent high energy prices, volatility and supply uncertainties have been extremely damaging to New Zealand's reputation as a place to invest. We believe there is an urgent need to review and reform NZ's electricity and gas markets, to address the dry year risks, as well as provide clear signals for investment in the medium and long-term. An emissions reduction plan should not ignore these issues.

Oji aspires to invest in our energy systems. For example, a large bio-energy project at the Kinleith Mill would likely half our fossil fuel consumption. It would produce 15 million GJ per year of zero-carbon process heat, 2.5 million GJ per year of base-load renewable electricity and export excess bio-energy. The project can be configured to provide excess energy to the market in the form of liquid biofuels or electricity, depending on Government or market signals. Unfortunately, the project faces competition for the \$600M plus investment from countries that offer direct incentives. Pre-feasibility work undertaken by consultants Wood-Beca has shown that renewable energy incentives in other countries means the project would be better-off by approximately \$200M in countries like Canada, Japan or Northern Europe<sup>1</sup>. Without supportive policies in New Zealand to counter the disadvantage, the project has a high risk of not proceeding.

#### Emissions Trading Scheme (ETS) and Complementary measures

We accept the ETS is New Zealand's principal tool for incentivising emissions reductions. However, the scheme has short-comings, in part because the price is not economy-wide, and because overseas jurisdictions apply different policies to encourage reductions, distorting the effect of the New Zealand price signal on international investment decisions. Oji agrees with the Climate Change Commission who said, *"the Emissions Trading Scheme (NZ ETS) alone won't get us to where we need to be".* 

We submit complementary policies for the bio-economy and renewable energy are crucial, but these must be supportive incentives, i.e. there needs to be more 'carrot' to complement the ETS 'stick', such as:

- Recycling NZ ETS auction revenues into incentivising low-carbon investments;
- Supporting innovation to reduce emissions in "hard to abate" industry; and
- Incentives for business to retire emissions intensive assets early.

Oji acknowledges some existing policies already complement the ETS in this way. For example, the Government Investment in Decarbonising Industry Fund (GIDI) and the Provincial Growth Fund (PGF) have both enabled projects to proceed. However, these schemes suffer from being small scale, and in our view are not enough to transform the economy at pace, certainly not enough to support the \$600M plus bio-energy project, described above.

<sup>&</sup>lt;sup>1</sup> The \$200M estimate is based on the renewable electricity tariff that was applied in British Columbia, Canada.
# Transport and biofuels

The Discussion Document has identified the climate benefits of transitioning to bio-based liquid fuels in de-carbonising land transport. While Oji could be part of this transition via the development of its assets located in the centre of the New Zealand's largest forestry resource, we recommend caution over the emphasis on wood-based biofuels at the expense of other parts of the wood products sector, noting that:

- The existing wood processing industry already extensively uses biofuels and wood residues.
- The wood sector is highly integrated, with complex relationships between forestry, lumber production and wood residues processing into cellulose for packaging and other products.
- International competitiveness for wood-based products (lumber, pulp paper and biofuels) relies on large scale operations.
- There are challenges with the availability and competitive pricing of wood (including fuel residues), which is ironic given New Zealand has leading climate and soils to grow softwood.

Internationally, much of the infrastructure and skilled workforce in biofuels from wood residues is based in pulp production, especially Kraft pulp production (such as at the Kinleith and Tasman mills).

Oji believes there is opportunity to improve understanding on how the maximum value is best extracted from trees as we move into the future where there will be growth in global demand for sustainable building products, sustainable packaging and renewable energy. We believe the Kinleith Mill is likely to be at the heart of these developments given its strategic location near our largest production forests and within proximity to transport hubs. Moreover, the Kinleith bio-energy project could be one of the first meaningful steps on the path to a modern wood-based bio-economy.



Our Ref: DR/88

26 November 2021

Ministry for the Environment Manatū Mō Te Taiao PO Box 10362 Wellington 6143

Via email: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

# Submission: Te hau mārohi ki anamata – Transitioning to a low emissions and climate-resilient future

OMV New Zealand Limited (**OMV**) welcomes the opportunity to make a submission on the above consultation document.

OMV recognises and supports the objectives of the Zero Carbon Act (2019) and the goal of achieving net zero emissions by 2050 and appreciates the role that the Emission Reduction Plan (ERP) plays in setting out the policies and strategies required to meet the next emissions budget.

OMV's submission consists of two parts. The first part consists of this letter which gives an overview of OMV interests in New Zealand and its view on several themes relevant to the ERP. This forms a grounding for the second part of the submission, included as an appendix to this letter, which provides specific answers to a selection of the questions posed in the consultation document.

#### **OMV in New Zealand**

OMV is an international energy & petrochemical company that has been helping to develop New Zealand's energy resources for over twenty years. OMV works to international best practice, protects the environment in which it operates and has an ongoing focus on improving the sustainability of its businesses.

Like New Zealand, OMV is on a journey to prepare for a low-carbon world with a focus on; reducing emissions from operations, increasing the emphasis on gas over oil, making products from hydrocarbons (rather than burning them), reusing those products in the circular economy and investing in new energies e.g. hydrogen and biofuels.

OMV's energy business in New Zealand operates ventures that produce around 50% of New Zealand's daily gas production via the Maui and Pohokura gas-condensate fields in Taranaki. OMV continues to play its part in the New Zealand's energy transition by investing in New Zealand's gas supply.

In recent years OMV has committed over \$500 mln to new gas supplies that provide an important bridge to New Zealand's future energy system. The most recent manifestation of this commitment is the ongoing drilling campaign on Maui A that

General Manager

**OMV Upstream** 



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www.omv.com



has delivered significant quantities of new gas to market this year and the upcoming drilling campaign on Maui B which will continue to deliver needed gas to the market in 2022 and beyond.

The company directly employs some 300 staff based in Wellington and Taranaki.

#### The role of gas in the energy transition

Gas plays an important role in the energy transition by avoiding the need to burn coal which has higher  $CO_2$  emissions than gas. By displacing coal, natural gas is the quickest and most affordable way to reduce global (and New Zealand's)  $CO_2$  emissions from the power, process heat and petrochemical sectors.

#### Electricity generation

Gas plays an important role in firming up intermittent renewable electricity generation. This can be the short-term firming of wind and solar generation or, just as importantly in a New Zealand context, firming up hydro generation during "dry years", both of which assist in keeping electricity price low, thereby supporting other sectors to electrify and decarbonise.

In power generation applications, gas can often be used instead of coal in existing generation assets at little extra cost (or in fact a discount) and with significantly lower emissions than coal. The IEA has indicated that "Given the time it takes to build up new renewables and to implement energy efficiency improvements, this [coal to gas switching using existing infrastructure] also represents the quickest route to emissions reductions."<sup>1</sup>

In the first six months of this year, if the coal used in the Rankine units at the Huntly power station had been replaced with gas, then approximately 900 k tonnes of CO<sub>2</sub> emissions could have been avoided (this is approximately three times the estimated annual emission reductions associated with the round 1 and 2 GIDI fund investments combined). Gas has the potential to play an increased role in New Zealand in firming up electricity supply from intermittent renewables either as a transition fuel (i.e. until the government aspiration of 100% renewable electricity is reached) or as a longer-term solution (as the Climate Change Commission and others assume).

#### Process heat

Gas and coal serve similar functions in the process heat sector, with gas having the advantage of lower emissions. Because of this, it is widely recognised that the most sensible emissions outcome is for coal to be phased out before gas<sup>2</sup>. Despite this, Fonterra has recently warned that the prospect of insufficient gas supplies could lead to the conversion of gas-fired process heat generation to renewable sources in preference to higher-emitting coal-fired process heat.<sup>3</sup> This highlights the importance of policy settings that ensure gas continues to be available where needed.

#### Petrochemicals

In New Zealand about half the country's gas production is used as an input to the petrochemical industry, mainly for methanol manufacture. About two thirds of that gas becomes a constituent of a product that is exported and does not count towards New Zealand's emissions (the remaining one third of the gas is used as an energy source).

<sup>&</sup>lt;sup>1</sup> The Role of Gas in Today's Energy Transitions, IEA 2019, Pg 19:

<sup>&</sup>lt;sup>2</sup> Consultation Document: Phasing out fossil fuels in process heat, MfE, April 2021, pg 26

<sup>&</sup>lt;sup>3</sup> Energy News, Gas shortage risk climate goals – Fonterra, Gavin Evans, 31 March 2021

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Globally, basic chemicals are often made from coal using processes that have much higher emissions than gas-based processes. Given the absence of short-term routes to decarbonise chemical processes at scale, the IEA has found that "Switching to less carbon intensive fossil feedstocks [e,g, from coal to gas]...is an important lever for delivering CO2 emission reductions in the Clean Technology Scenario."<sup>4</sup>

New Zealand's petrochemical industry plays an important role in mitigating the growth of much higheremitting coal-based chemical production overseas. This is likely to remain the case well in to the 2030s as large-scale decarbonisation of the chemicals industry will take time.

#### International perspective

Greenhouse gas emissions are a global issue where the overarching goal is to reduce emissions such that the global average temperature increase is limited to 1.5° Celsius above pre-industrial levels.

By necessity, reduction efforts and targets are nationally based e.g. New Zealand's net zero emissions target by 2050. Trying to meet global objectives with many different nationally determined policies introduces a risk that a country's efforts to reduce national-level emissions exacerbates emissions in another country.

This could happen if a country that currently imports relatively low carbon products from New Zealand, increases their higher-emission domestic production to offset the imports from New Zealand that were reduced to meet New Zealand's domestic emission targets. An example, where this could occur is in New Zealand's methanol exports where importers of New Zealand's product would likely turn to coal-based methanol production with many times the emissions of New Zealand's gas-based production.

The Climate Change Commission's draft report was alert to this risk of "carbon leakage" when it identified under Principle 2 (Prioritise Gross Emission Reductions) that "Aotearoa should focus on decarbonising its industries rather than reducing production in a way that could increase emissions offshore."<sup>5</sup> OMV agrees that it is not possible for New Zealand to make a meaningful contribution to the global effort to limit the global average temperature increase, if its national-level targets are achieved by exporting emissions offshore.

In that context OMV would welcome further certainty regarding the Government's overall appetite for an onshore manufacturing industry. If the contribution that industry makes (to foreign exchange earnings, GDP, strategic manufacturing skill sets, downstream business, employment and so on), is welcomed, then the Government's policy settings must allow for a good-to-great transition that allows time, innovation and technological advancement to play their respective roles. If perfect solutions are required from the outset then New Zealand risks losing domestic industry, processing and manufacturing capability outright.

<sup>&</sup>lt;sup>4</sup> The Future of Petrochemicals Towards more sustainable plastics and fertilisers, IEA 2018: pg 102

<sup>&</sup>lt;sup>5</sup> Climate Change Commission Draft advice, January 2021 pg. 29



#### **Investment required**

Gas is a non-renewable resource and without new exploration Taranaki is a mature hydrocarbon region dependent on continued investment in existing fields for production to be maintained and for gas to be able to play its role in the energy transition.

For OMV New Zealand to secure the funding for continued investment in New Zealand, projects must compete for capital against projects from other business units from around the world.

Project ranking is determined to a large degree by the quality of the resource base, production rates, the costs required to extract the gas and the fiscal regime. However, even good projects can fail to secure funding if there is a lack of confidence in the expected demand for the product or if there is a credible concern that regulatory and fiscal settings will change so as to erode or eliminate a commercial return on investment.

The need for a stable business environment is accentuated by the magnitude of the commitments involved and the length of time required to develop new gas. For example, the upcoming drilling campaign on Maui B which is expected to deliver gas next year, was initiated in early 2018 and has been worked continuously since then. It will involve a minimum of five wells, a drilling campaign of multiple wells is required to cover the fixed cost of bringing the rig to New Zealand.

#### Role of the ETS

The ETS is a robust tool for driving decarbonisation, and we support its use as the primary means by which New Zealand meets its emission reduction goals.

OMV acknowledges that there may be reasons for supplementary measures to enhance emission reductions or address equity concerns in some contexts. However, OMV also notes that just because regulatory interventions can be justified, doesn't mean that any specific regulatory intervention is justified.

There are risks with regulatory interventions like bans, mandates, additional reporting requirements etc. These risks include additional costs, unintended consequences or policy outcomes, inefficiencies, the introduction of regulatory uncertainty and in a cap-and-trade ETS scheme the risk that emissions are simply moved from one sector of the economy to another.

This means that bespoke regulatory interventions should be robustly justified with a cost benefit analysis that compares the outcome that is likely to be achieved by relying on the ETS alone with one that includes the ETS combined with the proposed regulatory intervention. Further to that, there is a risk of intervention 'silos', with no-one tasked with assessing the cumulative impact on investment (as opposed to emissions).

The specific market failures that a policy is attempting to address should be identified and the contribution of the ETS should be evaluated at a reasonable expectation ETS unit price.

#### Capability Retention

OMV, other operators, customers, the New Zealand government, and New Zealanders have built an indigenous gas-based energy supply capability that has served the country well over many decades. While some parts of that system will become redundant through the transition, the skills and organisational capabilities can and should be utilised to facilitate the transition.

Examples of current capabilities with potential to assist the transition in a number of possible transition pathways include: process engineering (Hydrogen), geology and reservoir engineering (Carbon Capture and Storage, geothermal), project management (core to delivering on energy transition pathways),



project finance, energy markets analysis and contracting and the ability to integrate these to form a coherent business.

A disorderly or rushed transition risks losing both organisational capability (e.g. via departure or failure of companies) and individual capability (e.g. via inability to recruit or retain skilled staff) and that has the potential to slow the energy transition.

As mentioned previously, in addition to the high-level comments above, we have addressed responses to several of the questions raised in the consultation document in the attached Appendix.

Yours sincerely



General Manager, OMV New Zealand



## **OMV New Zealand**

## Submissions on Specific Consultation questions

# 1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not?

OMV agrees that the emission reduction plan should be guided by a set of principles with the aim of providing a framework that gives confidence that decision making will be transparent and made with a degree of predictability.

In addition to the proposed principles, OMV recommends the Government formally adds the principle that New Zealand will not make global emissions worse in the journey to meet its domestic emission reduction commitments. See additional comments on this topic in the preceding letter.

# 2. How can we further enable private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonization.

It is important to acknowledge and clarify the role that gas plays as both a transition fuel and long-term element of the energy system (e.g. for hard-to-abate sectors) and to ensure that policy settings incentivize the investments that are required for gas to be able to play the role envisaged for it.

The consequence of not doing this will likely involve increased use of coal during the decades long transition period with worse emissions outcomes. To this end OMV supports the GIC's ongoing work to identify and address barriers to needed investment in the gas system. This would also be an important outcome of the proposed energy strategy.

More fully recognizing the potential for gas to decarbonize via bio-gas and hydrogen has the potential to unlock private investment to make this transition possible. For example, by postponing or removing the proposed gas connection ban until the potential for decarbonisation of gas is more fully understood.

A workstream to identify short-term opportunities for the displacement of coal with gas or LPG could unlock "easy wins" as gas can often be substituted for coal at relatively low cost. This could be done while recognizing and mitigating the risk of locking out future lower-emission technologies that may be ready to be deployed in the medium term.

The potential for Carbon Capture and Storage in New Zealand as a tool to mitigate carbon emissions is poorly understood and work with a focus on removing regulatory barriers to the deployment of this technology could make a valuable contribution (see additional comments in section 59).



# 3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

Please see responses to question 2 and 59.

Additional emission reduction opportunities could be unlocked by expanding the scope of the GIDI fund to include stationary gas or diesel driven machinery used in industry. Some of these units can be electrified now on economic grounds, but there are others for which electrification is not an economic proposition and for which GIDI fund support could be an enabler. There are potential applications for such reductions in OMV's operations (e.g. electrification of gas driven compressors) which may be more widely applicable to upstream operators, pipeline operators and others.

*Question 4:* Nothing further to add.

#### 5. Are there any other views you wish to share in relation to the Transition Pathway?

The transition pathway should be specified only at a very high level via the principles and in the energy sector via the energy strategy (see response to question 58). This is to ensure that the pathway is adaptable over time as the process of changing a highly complex and inter-related energy system in the context of a rapidly changing technology landscape cannot be predicted with accuracy. Avoiding an overly prescriptive pathway will provide space for government and private enterprise to adapt without compromising the overall objectives and principles.

Question 6: Nothing further to add.

# 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

Please see the answer to question 1. Any actions that New Zealand takes to reduce its emissions that results in a predicable increase in emissions overseas needs to be avoided to ensure that the New Zealand's actions do no exacerbate global temperature rises and the impacts of climate change.

Questions 8 to 20: Nothing further to add.

# 21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

The government should be held accountable for its actions and events that result in global emissions increases (or "carbon leakage"). This would involve setting up a process for identifying emission reduction actions that have a material risk of emission leakage, evaluating the extent and probability of such leakage prior to implementation and if implementation proceeds monitoring and publicizing the result of such policies.

Questions 22 and 23. Nothing further to add.



# 24. What are the main barriers or gaps that affect the flow of private capital into low emissions investment in Aotearoa?

Significant regulatory changes in recent years such as; the exploration ban, changes to decommissioning rules, proposals to eliminate gas from its natural role of supporting renewable generation (against CCC advice), the possibility of a gas connection ban, the proposal to review the ETS's industrial allocation regime (which is a threat to gas demand), and recent proposals on changes to the tax regime specific to the upstream gas industry have increased the risk of investment in New Zealand.

This combined with a lack of clarity on a government-endorsed vision for the medium- or long-term role of gas has made competing for capital to invest in New Zealand's gas supply (and storage) increasingly difficult.

While OMV New Zealand has successfully secured investment for additional gas in the short term, investment will also be required in the medium term to secure ongoing supplies and decisions that shape the nature of that investment are likely to be influenced by the factors mentioned above.

Questions 25 and 27: Nothing further to add.

# 28. Do you have sufficient information on future emissions price paths to inform your investment decisions?

In general, there is a good level of information and guidance on emissions pricing including:

- Cost Containment Reserve trigger price and floor price
- Climate Change Commission analysis on the ETS pricing required to meet transition objectives
- Transparency on historic emissions in the greenhouse gas inventory
- Information on the quantity and timing of units being made available

An area where transparency could be improved is in relation to the backlog of units being held and whether or not they are likely to be matched with existing retirement obligations (e.g. for when forests are harvested).

#### 29. What emission price are you factoring into your investment decisions?

OMV factors in an emissions price forecast into its investment proposals. This information, along with any other pricing assumption we make (e.g. gas and oil prices) is commercially confidential. However, it is not revealing much to indicate that it is significantly higher than the \$35 per tonne assumed in, for example, the analysis done as part of the consultation on phasing out fossil fuels from process heat<sup>6</sup>.

Questions 30 and 31: Nothing further to add.

<sup>&</sup>lt;sup>6</sup> Consultation Document: Phasing out fossil fuels in process heat, MfE, April 2021, pg 15

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#### 32. Are there any other views you wish to share in relation to emissions pricing?

The main uncertainty in relation to the ETS scheme is the ongoing review of the industrial allocation scheme. There is an element of the review that seems to be appropriate and largely technical in nature i.e. whether or not an historic over-allocation has occurred to some industries or participants and whether or not the settings of the existing regime should be adjusted to address over-allocation risks.

However, a more fundamental review of the system has also been flagged and it is unclear what this may involve and whether Emission Intensive Trade Exposed industries will continue to receive protection against the cost of their ETS exposure.

While this could impact any number of industries, we highlight methanol production given the pivotal role Methanex play in underpinning and supporting investment in the gas market, and therefore helping the gas industry to support other sectors during the transition.

Questions 33 to 57: Nothing further to add.

# 58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

OMV supports the development of a high-level, principles-based energy strategy for New Zealand.

As a starting point the energy strategy should define its objectives for each branch of the energy trilemma: sustainability, equity and security. These objectives should be specific, measurable, achievable, relevant and timebound (SMART). Also, for the strategic objectives to be useful, they should be kept simple, high-level and manageable in number.

The strategic objectives for greenhouse gas emissions (a sub-set of sustainability) are already in place in the form of the net zero target for 2050 and New Zealand's NDC commitment to reduce net emissions by 50% by 2050. It is possible that there are other sustainability targets that warrant attention (for example related to land or water footprint of energy generation) and New Zealand's ambitions for energy equity and security should be as clearly articulated as the emissions targets and elevated to the same level of importance.

Establishing strategic objectives will provide the framework for decision making in the development of the strategy itself which should remain high-level and direction-setting in nature. A strategy that is too specific becomes a plan and risks unnecessarily closing off the best paths to achieving the strategic objectives.

The strategy setting described above is perhaps different in nature to the policy development functions of central government and would perhaps benefit from a high level of interaction with industry participants. To that end a gas-focused workstream within the energy strategy would allow deeper engagement with industry-specific expertise.



#### 59. What areas require clear signaling to set a pathway for transition?

#### Emitters who contribute to global emissions mitigation

New Zealand has several industrial emitters (for example, methanol and aluminum producers) whose emissions intensity is likely to rank well against global producers. It is also likely that it could be demonstrated, with reasonable certainty, that the alternative to the continued operation of these businesses in New Zealand is increased emissions overseas.

It would be useful if the strategy clarified the government's support for the continued operation of businesses that are contributing to global emissions mitigation through their continued operation in New Zealand. This could be as benign as signaling the intention to "do no harm" by ensuring the viability of these businesses is not jeopardized through the imposition of excessive ETS costs and supplementary regulation which their global peers do not face.

Alternatively, there could be targeted support to assist in the decarbonization of these industrial facilities. Such support could lead to sustained competitive advantage for New Zealand, retention of New Zealand's industrial base, enhancement of New Zealand's reputation as a climate leader and aid in achieving emission reduction targets.

#### Gas in electricity generation

The aspired role of gas in electricity generation should be further clarified. There is potential for gas to play a role in reducing emissions this decade by displacing coal as an energy source at Huntly power station. However, OMV agrees with the findings of the GIC's Gas Market Settings Investigation which indicated that current arrangements in the gas industry are not optimal for gas to support the needs of electricity generation.

Addressing those short comings may require investment (in e.g. upstream deliverability, storage facilities, additional peaking capacity, LNG imports) which will be difficult to justify when the investment horizon is limited to 2030 by the 100% renewable electricity aspiration and the apparent willingness to do whatever it takes to achieve that outcome.

#### Maintaining gas infrastructure

The Climate Change Commission and others see an ongoing role for gas at reduced rates out to 2050. The infrastructure to support the ongoing supply of gas needs to remain in place for gas to play the role envisaged for it.

In addition, the role that green gas and hydrogen could play in decarbonizing gas supplies is being actively worked by the industry and shows some promise. It is important to ensure that a feasible opportunity to leverage existing assets to decarbonization is not closed through the premature retirement of the gas distribution infrastructure.

It would be useful if the strategy would signal the intent to support the gas infrastructure until such time as it is no longer needed.

#### Carbon Capture and Storage (CCS)

Internationally CCS is seen as a key technology for decarbonizing hard-to-abate sectors but is noticeably absent in New Zealand's emission reduction approach. There are also regulatory gaps that are discouraging private investigations into CCS potential. For example, emissions captured on behalf of third parties cannot currently receive ETS credits. This sends a message (intended or not) that CCS is in fact not wanted in New Zealand and it would be useful if the strategy could clarify the actual position of the government in this regard.



OMV's position is that it would be premature to remove CCS as a tool for reducing emissions and that further work is warranted to understand its potential and the regulatory barriers that would need to be addressed for CCS to be a possible source of emission mitigation.

# 60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

In terms of targets, OMV is of the view that the net zero target by 2050 and the 2030 NDC are sufficient to signal and drive change. Having an additional fuel-specific target does not seem to add value and even risks prematurely taking decarbonization options off the table. For example, power generation from gas combined with Carbon Capture and Storage (CCS) is not renewable but has very low emissions. In contrast, geothermally produced electricity is considered renewable, but can produce significant emissions.

If renewable energy target is to be pursued, then it should be set at a level that is informed by the completed energy strategy (and not before).

# 61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Reframing the phase-out of natural gas to instead focus on decarbonization of gas could usefully signal the continued role that gas is likely to play out to 2050. The phrase "phase out" sends a strong negative signal for the continued investment in gas production and infrastructure. This seems inconsistent with the (albeit reduced) role gas is envisaged to play out to 2050 and could be a factor in prematurely driving out needed investment.

Framing the challenge as decarbonizing gas would still encompass a reduction in the use of gas for process heat, but it would not preclude (as the current framing does) solutions like CCS and the potential to use gas as a chemical feedstock (where it ends up as a product rather than burned). Similarly, the current framing is not helpful towards green gases as the addition of the term "fossil" to the gas phaseout is not sufficient to ease perceptions that gas is on its way out in its entirety.

Other approaches that could improve the transition outcomes are mentioned elsewhere in OMV's submission:

- The addition of a principle against emissions leakage (see question 1)
- an energy strategy that addresses New Zealand's approach to: *emitters who contribute to global emissions mitigation, the role of gas in electricity generation, the continuity of gas infrastructure and green gases and the role of CCS (see question 59)*
- A robust framework for justifying carbon abatement measures beyond the ETS (see question 62)



# 62. How can work underway to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

It would be useful for government and industry to collaborate on a gas-focused workstream within the development of the overall energy strategy. The outputs of such a workstream would need to be synthesized and integrated with other elements of an overall energy strategy. But the disadvantages of having to do this integration work are out-weighed by having deep sector-specific knowledge working in a focused way on a part of the energy strategy they know best.

With regard to the use of gas for process heat, it is positive that the proposed National Environmental Standard and Policy Statement no longer requires that existing gas users demonstrate no economically and technical alternative to gas exists. However, OMV remains concerned that there are a significant number of other measures which impose costs on businesses that use gas with unclear emission reduction benefits or clear rationale for what market failure or equity concern is attempting to be addressed (examples include: requirement to demonstrate best practical option for existing gas use, the requirement to demonstrate no technically and economically feasible alternative to new gas uses, additional reporting requirements, limits on consent terms).

This concern is underpinned by the decision to evaluate the greenhouse gas reduction potential in process heat applications of the ETS at \$35/tonne (a price that even at the time of the consultation seemed low). No data is provided on what emissions reductions could be achieved at higher and more reasonable ETS assumptions. In the absence of such data, it seems reasonable to assume that the ETS alone would deliver most (if not all) the targeted emissions reductions from process heat.

OMV would see value in developing a standardized framework for assessing the impact of supplementary emission reduction measures to provide transparency and give confidence that additional regulation is indeed driving the intended emission reductions.

# 63. Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?

The short-term role that gas could play in mitigating emissions by displacing coal has been underexplored. This is understandable as it is natural to focus on end-points rather than transitions. However, emission budgets are cumulative over the five-year period and identifying relatively low-cost and fast transition solutions could provide some "early wins" in meeting emissions targets.

Where coal has been substituted for gas, further decarbonization will be possible later through hydrogen or biogas as technology and priorities develop.

Questions 64 to 67: Nothing further to add.



# 68. What level of support could or should Government provide for development of low emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

Not implementing the gas connection ban and instead focusing on measures to increase the proportion of green gases in the gas supply would provide a significant incentive for the development of green gases and remove one of the key barriers to continued investment in clean-gas infrastructure.

#### 69. Are there any other views you wish to share in relation to energy?

There is currently a strong focus on decarbonizing the energy and industry sectors of the economy. With reductions being targeted that far exceed, reductions being asked in other sectors of the economy.

For example, based on the modelled emission reductions on table 3 of the consultation document, the energy and industry sectors are expected to reduce emissions by between 6 and 14% in the first plan period compared to 3% to 7% for all sectors combined.

Or put another way, a sector (energy & industry, excluding transport) that contributes ca. 30% of emission are being asked to make ca. 60% of the emission reductions.

OMV urges caution as to the pace of the transition being demanded of the energy/industrial sector. Excessive speed could cut-off a highly productive part of the economy which could have been avoided if a more equitable distribution of emission reduction burden had been pursued.

#### Questions 70 and 71: Nothing further to add.

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

OMV does not support proceeding with the gas connection ban as this sends a strong negative signal to the development of green gases (including hydrogen). Green gases should be given the chance to prove their viability. If successful green gasses have the potential to contribute significantly to emission reduction goals and leverage the significant sunk investment in the gas supply system.

Questions 73 to 114: Nothing further to add.

Respectfully yet firmly, I ask MfE and the government to launch an expedient and independent review into the policy settings and legislation that have collided to cause the unintended, but seriously concerning, consequence that is exotic afforestation at scale on good NZ food growing farmland.

Our local community includes a large number of hill country sheep and beef farming properties. When all reductions from woody biomass (and the like) are formally identified, measured, verified and compared to the emissions profile of the said farming business, these properties are often found to be (largely) carbon neutral.

These iconic sheep and beef farming communities also hold much of NZ's special taonga as regards native bush cover. <u>https://beeflambnz.com/norton-report</u> .These iconic farming communities PROVIDE so much, in the way of :-

- **much needed food** and or the first stage in NZ's highly regarded grass fed pasture raised red meat protein story. Without these breeding areas, NZ's red meat supply chain doesn't even get out of the starting blocks! Food growing is not a fad, food growing is a necessity of life. NZ does food growing really, really well.
- **stable and decent employment**, offering housing and other meaningful rewards and future opportunities. Most farming systems have a clear, well trodden career path and or path to management, equity and full ownership.
- hugely important foreign exchange and or GDP
- taxation for government spending
- **housing** for the owners, their staff and other tenants
- a base for a growing visitor economy through Glamping, Farmstays, Farm Tours, Cottage Industry, ebiking, day walks and longer catered walks, historic tours etc
- **guardianship or kaitiatanga** of the local history, the biodiversity and the protected native bush. Absentee ownership by distant GHG polluters from Europe add nothing socially, economically or environmentally to our rural communities, economies or environments. Their spray, plant and walk away mentality is beyond the pale. Our community, if it survives the onslaught of carbon forestry, protects waterways, protects native bush and protects precious soils.

# Our community could be better supported to identify and take the following steps:-

- Learn more about the true carbon profile of their property and their production systeme. There could be opportunities to lessen emissions on farm but equally there could be opportunities to derive value from markets due to carbon zero, carbon neutral or carbon reducing status.
- Learn more about the opportunities to retire less productive areas of their farms

- Learn more about the opportunities to better reticulate water
- Learn more about the opportunities to work with more closely with nature via likes of regenerative agricultural practices
- Learn more about the opportunities in the market that reward provenance, good soil health, nutritious produce ie a more holisitic approach to the care of the people, planet and production.
- Learn more about the opportunities for alternative land uses ie alternative crops or animals.
- Learn more about the opportunities for adding value to those products already produced ie further meat, wool or wood processing
- Learn more about opportunities for community empowerment through building confidence, building hope, building community or catchments plans

# Our business could potentially make (or be helped to make) investments in:-

- Climate friendly technology ie solar, wind, EV's (please note that suitable EV utility vehicles are not yet available in NZ)
- Further fencing off and retiring of less productive areas
- Water reticulation systems to future proof for coming climate change, to allow fencing off of all dams, streams, waterways and wetlands. Water reticulation projects are such a win:win. Better for the animals health and productivity, better for the biodiversity, better for the production, better for the profit and better for the farmer.

# As an individual I can make the following changes:-

- Be aware of my personal carbon footprint (consider the family's most efficient car travel logistics, consider purchasing an EV at the next opportunity, limit both domestic and international air travel, eat grass fed pasture raised nutrient dense low emission beef and lamb, purchase and lay low emission wool carpet, purchase and use low emission wool insulation
- Consider a better way of dealing with food waste (by minimising it and recycling it)
- I need access to credible personal carbon footprint calculators. I am appalled that versions I
  have accessed before are not based on NZ's animal protein production system and therefore
  apply completely irrelevant and fraudulent emissions profiles based on other countries less
  carbon efficient system.
- Our communities require facilities that are set up to receive, recycle and reintegrate food waste. Food waste has enormous potential whereas much of it ends up in landfill or sewage ponds. This is so bad for the environment. And NZ import porks from countries with dubious animal welfare and food safety systems. Wherever possible NZ's food waste should be fed to animals such as pigs for conversion to much needed nutrient dense animal protein.

# In Summary

Please ensure the policies to be included in the final plan will lead to lasting and effective change.

Please ensure they are fit for purpose.

Please ensure that MfE considers the seriously harmful consequences of the current (and highly predictable) avalanche of sales and conversion of good food growing land to large-scale pine afforestation.

Blanket pinus radiata afforestation (for off-setting carbon) on good food growing land is an absolute travesty and it has happened at scale and at pace on the watch of MfE over the 2017-2021 period.

While Ministers and MP's might have "swatted us" away as inconvenient and annoying, it is MfE that has the ultimate responsibility for the Environment.

I personally would like to see an immediate acknowledgment by MfE that the unintended consequences are now too serious and too widespread to ignore or sweep under the carpet and I implore MfE's Minisiter and Senior Leadership Team to please show immediate recognition by calling a pause/halt to policy settings and legislation that favour blanket afforestation on good food producing land and instead launch a full and independent inquiry.

The stakes are seriously too high socially, economically and most importantly, environmentally to get this wrong and keep getting it wrong.

# And let's not forget "It takes courage to begin something but it can take even more to end it" Marie Forleo quote

Many thanks for considering my submission

Yours sincerely

Chair – Wairarapa Skills Leadership Group Member – Wellington Regional Skills Leadership Group Professional Food and Fibre Producer (beef, lamb, wool and export grade timber)

| From:        | Penelope Drysdale   |
|--------------|---|
| То:          | climate consultation 2021   |
| Subject:     | Submission to limit carbon offsetting using afforestation on farmland |
| Date:        | Tuesday, 23 November 2021 9:07:46 am                                  |
| Attachments: | image001.png  |

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To whom this may concern,

I am writing to say YES the government SHOULD limit carbon off-setting using afforestation on farmland in New Zealand.

Kind Regards

Penelope and Blair Drysdale

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|---|--|
|   |  |



26 November 2021

To: Ministry for the Environment Manatū Mō Te Taiao Wellington By email: climateconsultation2021@mfe.govt.nz

# Re: Transitioning to a low-emissions and climate resilient future: emissions reduction plan discussion document (the Discussion Document)

The New Zealand Institute for Plant and Food Research Limited's (Rangahau Ahumāra Kai) core purpose is to enhance the value and productivity of Aotearoa New Zealand's horticultural, arable, seafood, and food and beverage industries to contribute to economic growth and the environmental and social prosperity of Aotearoa New Zealand.

We believe that our science can make the world a better place. That by working together, we can create a smart green future, for Aotearoa New Zealand and the world. For us, a smart green future means we use all available knowledge to produce healthy, nutritious food from the land and sea, while ensuring we protect our environment and create opportunities for future generations.

We see a well-considered emissions reduction plan as a vital tool for enabling a smart green future for all current and future New Zealanders. We have previously responded to the *2021 Draft Advice for Consultation*. Once again, we applaud the aspiration and accessible style of the Discussion Document.

We have chosen to submit on specific aspects of the Discussion Document and as we have throughout this process, remain available to provide specific evidence in support of our submission or to meet with officials to discuss further. To achieve any of the transformational goals highlighted throughout the Discussion Document, we suggest close consultation with the science industry will be the most successful approach.

In summary, our main points in response to the Discussion Document are as follows:

- Aotearoa New Zealand is a leader in horticulture systems and the associated science and this should be leveraged to ensure we can achieve the goals of the emissions plan.
- Aotearoa New Zealand's response to climate change must be progressive. We cannot tackle a 21<sup>st</sup> century problem with 20<sup>th</sup> century solutions.
- We support a principled transition pathway approach that champions a productive, sustainable and inclusive Aotearoa New Zealand.
- To achieve the impact required by the emissions plan we need proven, adoptable solutions that affect emissions along the value chain.
- We suggest that the rate of growth required in horticulture production is ambitious, and will require dedicated investment support to occur.
- A transition to a low carbon economy will need locally-adapted approaches and authentic engagement and co-innovation with mana whenua, iwi and the wider community.
- Significant funding tools need to be implemented to enable key developmental science in the area of climate solution innovation.
- To achieve climate solution innovation, a mission based approach is a promising option, however it is vital these missions be well defined and backed by solid policy frameworks designed to facilitate industry involvement and adoption.
- Plant & Food Research will make itself available at any point in this process to provide input into the development of the emissions plan.

Plant & Food Research is providing this response on its own behalf and not on behalf of any particular client or joint venture partner.

# **Transitions pathway (Questions 1-5)**

Plant & Food Research supports the vision statement of the transition pathway highlighted in the Discussion Document for a *"productive, sustainable and inclusive Aotearoa"*. As a leading science provider we strongly support the adoption of a transition pathway that helps to ensure production systems are regenerative and provide a way forward to innovation and investment to meet future challenges. We agree that a comprehensive framework and whole of government approach is required to achieve climate targets necessary to avoid catastrophe.

This emissions plan must be designed to be a powerful catalyst for innovation, and more than that, it must inspire and incentivise investment to build the necessary momentum required in private industry to change the framework we have operated in until this point in time. For sectors to take the action needed to combat climate change we need proven, adoptable solutions that can materially affect emissions along the value chain.

One further measure that could be considered to 'help close the gap', as identified by Question 4, would be an enabling piece of work designed to help match land use to its suitability. Matching land use to its suitability can be part of a holistic approach to enabling the reduction of emissions. For example, retiring unproductive land to tree plantings can reduce emissions from low performing areas of a farm and boost carbon sequestration. Similarly using the most productive land for high value land uses (e.g. forms of horticulture) may allow farmers to reduce the intensity of other higher emitting land uses. Plant & Food Research recognises that in the instance of Māori freehold land or whenua tupuna this would require a cautious approach and agreement; ~80% of Māori freehold land is in land use capabilities VI-VIII but suggestions to change the use of that land may be perceived as a modern attempt to alienate Māori from their whenua.

## Helping sectors adapt (Questions 6-7)

In our 26 March 2021 submission we commented on 'the contribution of land use change'. The points made remain prescient and therefore rather than referring to them we have chosen to reiterate them below.

The prime opportunities for profitable expansion of horticulture in the short to medium term lie largely with existing perennial tree and vine crops. Plant & Food Research is working with our industry partners to enable this while recognising that increased production needs to occur in the context of expanding markets and to be supported by growth in the necessary handling, storage and transport infrastructure.

In the longer term, we see potential for entirely new horticultural crops to provide further land use options for land managers to consider. To realise this potential will require investment in research and development to identify options, optimise production, storage and transport, and to understand the environmental impacts. New funding models will be needed that are not contingent on industry co-investment as, by definition, there will not be extant industries of scale for these new crops.

We note that the Commission has assumed conversion of dairy to horticulture at a rate of 2,000 hectares per year from 2025. While we would welcome carefully planned and supported growth of the horticultural sector, 2,000 hectares per year would be a very significant increase in the area of horticulture. This increase would be associated with the challenges of attracting capital investment, developing infrastructure and supply chain logistics, building a skilled workforce and accessing markets. As such, we consider that growth of horticulture at this scale will require a strong partnership approach between government, industry and the science system alongside supportive policy settings regarding water security, access to labour and improved market access.

Please note that we are working with the perennial horticulture industries to understand better the net carbon balance of orchards and vineyards, to assess the sequestration of carbon in the soil of these deeper rooting perennial crops and the associated shelter, as well as the biogenic carbon capture by the trees and vines themselves including the associated shelterbelts. Established assumptions regarding the carbon balance of these systems are likely to need revision over time.

# Working with our Tiriti partners (Questions 8-12)

Plant & Food Research supports and acknowledges the Crown's responsibilities to Te Tiriti o Waitangi, and its responsibility to implement these principles into policy, legislation and its decision making process. As noted in our submission dated 26 March 2021, we are active in supporting land managers, regulators, businesses and community groups with information on the range of land use options open to them that will allow Māori to make informed decisions about their whenua to meet their long term aspirations. Plant & Food Research are enabling mana whenua to achieve this in projects on ahumāra kai (perennial horticulture) and māra kai (vegetable production) with Te Whānau-a-Apānui in the Bay of Plenty and iwi in Te Tai Tokerau, as well as developing similar connections with iwi throughout the motu.

One of the goals of Plant & Food Research's Tono strategy is 'co-innovation with Māori'. This goal is centred on finding ways to work with Māori organisations to deliver research that weaves concepts of Mātauranga Māori and te ao pūtaiao (science). This type of co-innovation focused, relationship driven, research should form part of an approach to innovation in the emissions space. Plant & Food Research is available to further discuss our Tono strategy and models for co-innovation as part of this Discussion Document process.

# Funding and financing (Questions 24-27)

One major challenge that any emissions reduction plan will face is the difficulty of establishing and supporting new, low-emissions primary sectors in Aotearoa New Zealand. As highlighted in our submission dated 26 March 2021, compared to many countries, our agricultural emissions are very significant. To support behaviour change in this sector in pursuit of emissions reductions focus needs to be directed at industry leadership of the relevant sectors of Aotearoa New Zealand. A key question to answer is 'how can we enable our industry leaders to integrate game-changing climate focused tech-solutions into their businesses?' It is important that an emission plan is designed with that question in mind to better enable us to develop science that can deliver powerful impacts to key industries.

We are aware of the particular challenges in horticulture we need to overcome in the science space to achieve a marked impact on emissions. Research funding closely tied to identified missions would provide a compelling opportunity for scientists to bring their knowledge directly to these challenges more swiftly. International trends suggest that done well, climate solution innovation can help to grow the economy and will be a source of novel, high paying jobs in many sectors, not just science. Therefore these missions should encourage a high degree of collaboration between science and in particular the emerging agri-tech sector.

Key funding mechanisms implemented to help fund climate solution innovation in the emissions plan should be designed to help absorb excess short-term risk for private investors. Tools to enable climate innovation investments to become more appealing will help science providers attract investment that might otherwise be spent on non-climate related projects. There is also a need to consider that the return on investment may be realised over a longer period than other opportunities. For example, investment in a plant breeding programme can result in commercial outputs that take up to twenty years to come to market, yet this investment is absolutely necessary in the face of climate change. The emissions plan must consider mechanisms to provide early stage funding to key projects until they become commercially viable.

# Research, science and innovation (Questions 36-41)

A well-defined, mission based approach may help engage sectors and growers to discuss pathways forward and new options for land-use and land-use practices. If these missions were supported by both public and private investment they would be well placed to design transformative, low-emissions food production systems and improve parts of the supply chain.

Aotearoa New Zealand is a leader in horticulture, horticultural systems and the associated science. This unique global advantage should be championed in the emissions plan. In putting together the plan, we

should be asking "how can we best leverage our outstanding performance in the horticulture sector to achieve our emissions reduction targets?"

Although horticulture is not classified as a high carbon emitter, we are also well placed to carry out and apply the science required to achieve carbon zero fruit production. This work would require high levels of innovation and applied science throughout the entire supply chain, and it would place us as a world leader in the space; an example for other nations to look to.

Plant & Food Research's innovative Future Orchards Planting System (FOPS) for apples and other tree crops is a good example of driving productivity and improving quality without increasing the environmental footprint. Here we are achieving over a twofold increase in productivity per hectare compared to contemporary systems. Further funding for systems like FOPS is necessary to incentive intensification of land use while minimising inputs. Plant & Food Research is willing to work with MfE to identify other opportunities which may further entice and incentivise land use change to horticulture, in line with the ambitions of the Climate Commission.

Aotearoa New Zealand will also require plant breeding programmes to future-proof food supply through the development of innovative, climate adapted varieties. Plant & Food Research have had some success with this already, in the Hot Climate Breeding Programme. This programme was initiated in 2002 by Plant & Food Research in Aotearoa New Zealand, the Institute of Agrifood Research and Technology (IRTA) in Spain, and Fruit Futur, an association of fruit producers in Catalonia. The Hot Climate Programme develops new apple and pear varieties adapted to high temperature growing areas.

Based on present data it is reasonable to conclude that similar programmes will be required for all manner of other crops to ensure a secure food supply. The Hot Climate Breeding Programme took 18 years before the commercial release of its first apple variety. Given these extended timelines, we will need to look to more than industry funding to initiate and maintain programmes of this magnitude.

# Agriculture (Questions 83-88)

The Climate Commission has set the goal of converting dairy to horticulture land use at a rate of 2,000 hectares per year from 2025. For the reasons outlined above in 'helping sectors adapt', we believe that this goal can only be met with a strong partnership approach between government, industry and the science system alongside supportive policy settings.

Plant & Food Research is supportive of the proposed measures highlighted in this portion of the Discussion Document. We do however note the important need to maintain an equitable transition, especially given the impact this may have on farmers and growers. Accordingly, we see that any uptake of mitigation mechanisms, as outlined in the Discussion Document, will require a concerted effort to highlight the economic opportunities that come from the implementation of such measures. This will mean any proposed measures should be accompanied by clear evidence of their impact on emissions or productivity systems. The provision of trusted, independent advice on farms and in orchards will be necessary to enable practice change to deliver emissions reductions from the land-based industries. It is unclear whether the current ecosystem of advisory services is optimised for this outcome.

There is also an opportunity for comprehensive land use modelling to be carried out to better show what is possible now, and into the future for horticulture. Horticulture currently covers about 200,000Ha in Aotearoa New Zealand. We know that our climate and soils could enable up to a tenfold increase in this level. The limiting factors at this point in time are primarily related to resourcing and infrastructure. Detailed land use modelling will enable informed decisions to be made in a timely manner and may help accelerate land use change.

As mentioned in our 26 March 2021 submission, evidence from our decades of water-related research indicates that perennial horticulture uses, in general, some 30-40% less water than a typical pastoral farm on a unit area basis. Furthermore, nitrogen fertiliser is generally not favoured in horticulture, as it only promotes wasteful vegetative growth that needs to be pruned to enable good floral development and quality fruit maturation. Therefore, diffuse nitrate leaching losses from perennial horticulture are typically less than 20 kg-N/ha/year. This compares very favourably to most dairy systems. There is still work to be done is the space of optimizing inputs to the horticulture space and adequate investment in this area could yield impressive results in terms of lowering horticultural inputs and emissions.

## Waste (Questions 89-99)

We note the role that effective waste management could play in reducing greenhouse gas emissions in Aotearoa New Zealand. Additionally we think that there is an important place for minimising waste in the first place. In an arable and horticultural cropping context this means maximising the proportion of high value, utilisable biomass from the production system, as well as ensuring efficient supply-chain management, and waste minimisation through packhouses, coolstores and shipping. Plant & Food Research is interested in further discussing opportunities to contribute to the necessary research around minimising waste in the horticulture sector.

Yours Sincerely,

Chief Scientist

| From:    | Pohutukawa Tawhai                     |
|----------|---------------------------------------|
| То:      | climate consultation 2021             |
| Subject: | Losing Our communities                |
| Date:    | Tuesday, 23 November 2021 10:26:51 pm |

#### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

To whom it may concern,

The current rate of afforestation that is occurring in New Zealand is devastating to our local rural communities. The once proud and hardworking rural generation is dwindling and taking it's sense of kiwi ingenuity with it. The "can do" attitude is being replaced with the "someone else will fix it" stance. This is all due to major planting of pines that is destroying our social fabric by systemically removing farmland from our agricultural industry.

Not only are we losing an entire way of life but also a means to support our country and the world. How can we ever hope to supply our planet with enough food if we are simply planting rich farmland into trees to support corporate pollution??

As a proud product of a rural community, I insist that you must reconsider the parliamentary actions of so few that is affecting so many. Please reverse or, at the very least, lower the current rate of afforestation so that we may yet feed ourselves and generations to come.





Ministry for the Environment climateconsultation2021@mfe.govt.nz

23 Nov 2021

## Porirua City Council Emissions Reduction Plan Submission

Thank you for the opportunity to submit on the first national plan to reduce greenhouse gas emissions.

- Porirua City Council is supportive of the intent of the Emissions Reduction Plan to coordinate action and implement a national plan to make meaningful and timely reductions in New Zealand's greenhouse gas emissions. We agree that it is important that New Zealand plays a leadership role in our efforts to reduce the impacts of our changing climate.
- 2. There are however, several matters we wish to bring to your attention to maximise the impact the final Emissions Reduction Plan will have.
- Local government is well positioned to partner with central government to implement the national emission reduction plan especially in the areas of increased use of public and active transport and waste reduction.
- 4. Our partnership will be assisted by central government providing the policy, frameworks, resourcing, best practice standards and funding that is needed to give life to the plan. We need an all-of-government response that brings alignment between regional councils' territorial authorities and central government partners such as Waka Kotahi and Kāinga Ora around delivery of the plan.
- 5. The consultation document contains little detail about how or who will deliver on the targets and almost no information about where the funding to enable the urgent and needed cuts in emissions is coming from. We recommend that the final Emissions Reduction Plan be much clearer about how the emissions reductions will be achieved and who will be responsible for its implementation.
- 6. We request that the recommendation in Ārewa ake te Kaupapa Interim report, September 2021, be taken up in developing this Plan and that a local government impact assessment is undertaken to provide clarity and transparency about what the Emissions Reduction Plan will mean for local authorities. This will contribute to the joined-up approach, increase visibility of impacts so they are resolved rather than shifted.
- 7. While supportive of the diversion of organic waste away from landfills it will take time to implement the alternative infrastructure, logistics and behaviour changes that are needed. It is also unlikely that there is a viable consenting pathway for the diversion of wastewater treatment plant sludge away from landfill disposal. However, the most significant changes that are needed in waste in New Zealand are not in disposal but are instead in avoidance of

Porirua City Council PO Box 50218 Porirua 5240 04 237 5089 enquiries@poriruacity.govt.nz poriruacity.govt.nz



creating waste in the first place. Much stronger central government action and legislation is needed to reduce waste at source and to coordinate and support recycling at a national level.

- 8. There are much more effective tools, such as regulating for product stewardship, available to drive the desired emission reductions than the Emissions Trading Scheme (ETS) and we encourage the government to avoid using the ETS as the primary driver of change in waste management.
- 9. Porirua City Council supports the desire for a fair, equitable and inclusive transition that the consultation document identifies as a guiding principle. We request that the plan is more explicit in how societal inequalities will be addressed and how a just transition will be achieved by this plan.
- 10. Porirua has a diverse community and the transition to low carbon emissions has the potential to exacerbate inequalities, particularly in the access to best practice active and public transport. The rapid reshaping of our cities needs to keep equality of access as a primary objective. We strongly encourage the adoption of the outcomes sought by The Free Fares campaign organised by The Aotearoa Collective for Public Transport Equity, including free public transport for under-25s, tertiary students, and Community Services card-holders.
- 11. It is acknowledged that reforestation will play an important role in managing our national emissions. Porirua City Council recommends that the policy emphasis and funding support is directed towards native reforestation rather than exotics such as pine.

We would welcome an opportunity to discuss these matters further as the plan is developed.

Ngā mihi

Wendy Walker Chief Executive Kaiwhakahaere Matua

poriruacity.govt.nz



# Submission on the Emissions Reduction Plan

PPTA | PO BOX 2119, WELLINGTON 6140 | P. +64 4 384 9964 | E. ENQUIRIES@PPTA.ORG.NZ FILE NUMBER: S/R/A/SUBMISSIONS

### 1. Introduction

Every child deserves to have access to quality, science- and Mātauranga Māori-based climate change education. Learners should feel empowered with the knowledge, skills, values, and attitudes that are needed to act as agents of change. Tamariki must be supported to engage with their local communities and take part in actions to improve their environment. Our tamariki mokopuna deserve to breathe clean air at school and in their communities. Our schools can role-model sustainable and low-carbon actions for their communities. This is PPTA Te Wehengarua's vision.

We are living in a climate emergency. According to the world's leading climate scientists, massive changes to global society must be made today to avert the worst consequences of runaway climate change. In the fight for the survival of people and the planet, education, schools, iwi Māori, Pacific Peoples and workers will play a critical role.

Below, you will find a list of PPTA Te Wehengarua's four priorities, along with key questions for further action.

## PPTA Te Wehengarua's Key Priorities for the Emissions Reduction Plan:

## 1. Iwi Māori and Pacific Island communities must be genuinely engaged in a Just Transition

First and foremost, the Emissions Reduction Plan must demonstrate a strong commitment to article two of Te Tiriti o Waitangi, 'ō rātou taonga katoa' – not just in words, but through priorities, actions, engagement, and resources. The Emissions Reduction Plan requires adherence to kaitiakitanga values of the indigenous people of Aotearoa New Zealand, Māori. Dismissal of indigenous knowledge has led to climate crisis and a breach of Article II: Te Tiriti o Waitangi (1840). Therefore, the ERP must follow indigenous knowledge/Mātauranga Māori to enable a deeper understanding and more harmonious connection with Papatūānuku among diverse communities of Aotearoa New Zealand.

The ERP must also take into account the impact of climate change on Māori and Pacific communities. The risk to coastal communities of flooding, and waterway pollution will likely cause larger impacts on many areas with high proportions of Māori and Pacific peoples. The reality is that climate change is already occurring in Pacific nations, who are experiencing sea level rise, volatile weather patterns and displacement of communities. Comprehensive and meaningful engagement with iwi Māori and Pacific communities is crucial. The Hon. Minister for the Environment and Hon. Minister of Finance must provide the resources, pathways and financial support to ensure a Just Transition for our most vulnerable communities.

## Key Considerations:

- To what extent is Article Two of Te Tiriti being upheld via affirmation of tino rangatiratanga and protection of taonga katoa?
- How will the Hon. Minister James Shaw ensure that the voices of rangatahi Māori (Māori youth) are included?

- In what ways and to what extent have iwi Māori such as rūnanga been engaged?
- What would a tikanga Māori way of transitioning to a low-emissions society look like?
- How will Hon. Ministers James Shaw and Grant Robertson balance the risks, the costs, and benefits of climate change policies?
- What needs to change, and how will the most vulnerable be supported and prioritised?

## 2. <u>Climate Change Education (CCE) plays a crucial role in a low-carbon economy</u>

PPTA Te Wehengarua believes that climate change must be taught in every classroom to better equip our students for the uncertainties of our rapidly warming world. Moreover, this education must go beyond teaching students about the science and should not be limited to one learning area. Learners should be encouraged to engage with global and local knowledge, as well as Mātauranga Māori, and to act upon this knowledge, through inquiry and participation in local climate actions. Climate change education should be taught across the curriculum and teachers should be taught how to incorporate this into their learning area.

To achieve this vision, Hon. Minister Chris Hipkins must require initial teacher training programmes to provide consistent and intentional direction for climate change education teaching. The Ministry of Education must provide ongoing professional learning for teachers that is aligned with current research and developments.

While some climate change resources are available, these can be piecemeal, and it is difficult to access these and know how they fit into the curriculum. The onus is currently on individuals and teachers to locate resources and ensure these are fit for purpose. There must be a top-down, systemic requirement and accountability for teaching about climate change, mitigation, and adaptation in schools, including how to live in a low-carbon economy. The Hon. Minister of Education must create a clear climate change education action plan, that outlines the provision of climate change education across all levels of education in Aotearoa New Zealand and must include Mātauranga Māori.

PPTA Te Wehengarua believes that the delay of the New Zealand Curriculum Refresh and NCEA changes gives more time for the Ministry of Education to add climate change education as a unique learning area, following the Understand, Know, Do model and/or to add CCE content into a wide range of learning areas.

## Key Considerations:

- What would effective climate change education look like in our secondary/area schools?

- The environment, sustainability and participating and contributing are explicitly mentioned in the Vision Statement, Principles, Values and Key Competencies in the 2007 New Zealand Curriculum. How will the Ministry of Education ensure that what is currently in the front half of the curriculum is not lost in the curriculum refresh process?
- How can we use the curriculum/NCEA refresh delays as an opportunity to add climate change education in a way that is meaningful and tangible?
- What specific resources and training would be needed in specific settings/roles?
- How would the impacts on teachers' workloads be managed?

## 3. Decarbonising the education sector requires urgent funding

Currently, more than 400,000 young people in Aotearoa attend schools that are waiting for government funding to be able to transition to renewable energy. Over 900 schools in Aotearoa (out of around 1100) are still waiting for funding and only 8% of schools have been funded to transition to renewable energy<sup>1</sup>. Many of the schools who have been allocated funding are still waiting for the transition to occur.

Burning fossil fuels including coal, oil and natural gas creates air pollution, which is thought to be responsible for more than 1200 deaths each year in Aotearoa New Zealand<sup>2</sup>. Our tamariki and kaiako deserve to work in healthy environments with clean air to breathe.

The government has pledged that the public sector will be carbon neutral by 2025. The Hon. Minister Grant Robertson must allocate funding in every budget between 2022 and 2025 to ensure that every state school will be fossil fuel free within this period.

# Key Considerations:

- How can the Hon. Minister for the Environment and Hon. Minister of Finance ensure that schools with the lowest equity index, including those with high proportions of Māori and Pacific learners are prioritised for funding?
- What kind of renewable energy sources should be prioritised?

# 4. There must be genuine engagement with working people

Aotearoa New Zealand must transition into a low-carbon, green economy. This move will negatively impact the workers who are currently employed in industries and jobs that will no longer be needed. Engagement with workers must be a crucial part of Aotearoa's

<sup>&</sup>lt;sup>1</sup>https://350.org.nz/fossil-free-schools/

<sup>&</sup>lt;sup>2</sup> https://www.ehinz.ac.nz/indicators/air-quality/health-effects-of-air-

pollution/#:~:text=Air%20pollution%20has%20major%20effects%20on%20health%20in,people%29%20236%20cardiac%20hospitalisations%20%285.0 %20per%20100%2C000%20people%29

Emissions Reduction Plan, as they are the ones who will be impacted by the changing nature of work. A Just Transition is needed.

The voice of educators – both as workers, and as members of their diverse communities – must be included in social and policy dialogue. Education and training play a core role in this work, and pathways to transition workers into new careers must be established and resourced.

## Key Considerations:

- How will the Hon. Minister for the Environment ensure that the voices of educators and working people are heard during the transition?
- How will the Hon. Ministers of Education and Finance establish and fund pathways for workers impacted by the transition to a low-carbon economy?
- Which forms of training and pathways will be needed?



# **Property Council New Zealand**

# Submission on Te hau mārohi ki anamata: Transitioning to a low-emissions and climate-resilient future

# **Shaping the Emissions Reduction Plan**

23 November 2021

For more information and further queries, please contact



## **Shaping the Emissions Reduction Plan**

#### 1. Recommendation summary

- 1.1 Property Council New Zealand (Property Council) supports the overall objectives of emissions reduction and recognises that there is a lot of work required both from Government and the private sector to achieve this. The sector requires a clear plan and pathway on how we can achieve emissions reduction.
- 1.2 Property Council makes the following recommendations:
  - Clear national direction is required for integrating emissions into urban planning and funding.
  - The property sector and its infrastructure and developments should be viewed in its entirety with necessary trade-offs considered.
  - Provide further clarity in relation to the Climate Commissions modelling for decarbonisation of energy and invest in LCA modellers due to the skill shortages New Zealand faces within this field.
  - Develop data collection prior to setting standards to ensure we have an accurate understanding of New Zealand buildings performance and how we can best build on this. This in turn will help drive behavioural change.
  - The Government take a leadership role in making the necessary changes and driving experiments alongside developing incentives for the property sector and business to viably follow suit.
  - Allow for tax deductions for retrofit strengthening, refits and service fits to encourage more owners to undertake work that will reduce overall emissions.
  - Introduce tax incentives for sustainable buildings in the short term, as they have less demand on infrastructure than non-green buildings.
  - Recognise and develop separate targets for the residential, commercial and industrial sectors.
  - Provide further incentives by investigating the opportunity to meet premiums for the difference between standard materials and green materials.
  - Understand the size of the residential, commercial and industrial sectors and encourage smaller and quicker moves within the residential sector.
  - Establish HomeStar ratings as a mandatory LIM report requirement.
  - Work with property sector experts to provide clarity on F-gases and ensure that there are not any unintended consequences for the property sector.
  - Encourage cross-partisan support for the Emission Reductions Plan.



### 2. Introduction

- 2.1 Property Council welcomes the opportunity to submit on the Government's consultation document Te hau mārohi ki anamata: Transitioning to a low-emissions and climate-resilient future.
- 2.2 Property Council's purpose is "Together, shaping cities where communities thrive". We believe in the creation and retention of well-designed, functional and sustainable built environments which contribute to New Zealand's overall prosperity. We support legislation that provides a framework to enhance economic growth, development, liveability and growing communities.
- 2.3 Property is currently New Zealand's largest industry with a direct contribution to GDP of \$41.2 billion (15 per cent). The property sector is a foundation of New Zealand's economy and caters for growth by developing, building and owning all types of property.
- 2.4 Property Council is the leading not-for-profit advocate for New Zealand's largest industry- property. Connecting people from throughout the country and across all property disciplines is what makes our organisation unique. We connect over 10,000 property professionals, championing the interests of over 550 member companies have a collective \$50 billion investment in New Zealand property.

## 3. Overview

- 3.1 Property Council supports the Government's intentions and targets for the emissions budget. However, we are surprised by the lack of detail, not only in providing the sector with the Climate Commissions economic modelling, but also in terms of suggested solutions that go beyond what we saw a year ago within the Building for Climate Change work programme.
- 3.2 We support a transformative shift required for businesses to meet our emission targets. However, it is extremely important for Government to understand that it has far greater capital capacity to make these changes. Increasing costs on landlords (particularly during COVID-19) will be the main barrier towards compliance.
- 3.3 On 31 October 2021, the Government announced to increase its contribution to the global climate target, known as the Nationally Determined Contribution ("NDC"), to reduce net emissions by 50 per cent below gross 2005 levels by 2030. This will require emissions to be reduced significantly further than what is outlined within this consultation and recommended by the Climate Change Commission. Continually changing the goal posts do not provide the certainty and clarity the business sector needs.
- 3.4 Leadership from central government is required. We have provided extensive recommendations in our previous submissions (<u>Building for Climate Change</u>, 2020 and <u>He Pou a Rangi: Climate Change Commission's Draft Advice</u>, 2021) that could have significant short, medium and long-term emission reductions. It is a real shame, that these recommendations have remained stagnant and little to no development of these are evident within this consultation document. The sector requires a clear plan and pathway on how we can achieve emissions reduction, far beyond what we have seen in current and previous consultation documents.



#### 4. Emission pricing

4.1 Property Council supports the proposal to encourage gross emission reductions through the New Zealand Emissions Trading Scheme. It is important to note that the consultation document rightly mentions that this is not the only mechanism to reduce emissions, and that pulling other levers such as regulation and policy alongside removing current barriers will help assist in reducing emissions through New Zealand.

#### 5. Planning

- 5.1 The consultation document discusses integrating emissions into urban planning and funding. Property Council is concerned with the lack of detail within the proposal and limited to no guidance from Central Government. Like many regulatory changes of such significance, this will likely result in huge roadblocks to granting resource consents. Furthermore, without clear guidance it would likely result in huge delays to planning decisions. For local authorities and applicants to have certainty, we need to ensure that integration comes with clear and consistent national direction.
- 5.2 Currently, we have capacity and capability issues within local government, and the inclusion of emissions into urban planning and funding into local government planning regulations would likely result in inconsistencies across the board (i.e. emission pricing and calculations). We strongly recommend a more collaborative approach is undertaken between Central and Local Government and the property sector.

#### 6. Transport

- 6.1 We support an equitable transition towards lower carbon transport options within New Zealand. In the short to medium-term, lower carbon transport options will have to be balanced with the need to deliver housing and infrastructure. If balances are not considered, New Zealand will add to its current housing and infrastructure shortages.
- 6.2 We support the move to more EV and hybrid private vehicles alongside implementing a mode-shift plans for our largest cities, improving public transport and enable congestion pricing.
- 6.3 We are concerned with the proposed supply chain strategy heavily focusing on trains and the reduction of aviation and maritime modes of transport. An over-reliance on one particular transport sector could cause issues in the long run. For example, the Costal Pacific railway was closed for two years following the Kaikoura earthquake. Our members will still need roading connections and private access to transport goods and services and build development. This cannot be undertaken by other forms of transport easily or as effectively.
- 6.4 Whilst we want to play our part, it is important that the property sector and its infrastructure and developments are viewed in their entirety with necessary trade-offs being considered. Otherwise, a piecemeal approach would most likely result in increased costs both financially and environmentally. For example, the recycling of materials alongside new building materials would likely result in two different methods of transportation increasing initial emissions to get the total materials to the site required. Without considering the potential benefits of using the recycled material, the initial emissions may look worse-off than the long-term gain.



### 7. Energy and industry

- 7.1 We support the phase out of fossil gas in the energy system.
- 7.2 There may be circumstances, where new builds occur on existing sites (i.e. a campus). For example, our members require clarity on whether a new building on an existing campus site would be included in the sites' overall fossil fuels or would be separately analysed.
- 7.3 Our submission to the Climate Commission accepted the need for commercial and public buildings to decarbonise their energy use for heating, hot water and cooking. We note that this would require collaboration of all players in the building sector. For example, information and data, innovation and policy development working together to lower the use of embodied carbon. It is also important to note that there are not enough LCA modellers in New Zealand due to the skill and labour shortages in this area.

#### 8. Building and construction

- 8.1 We support reducing fossil gas use in buildings. However, we are cautious that setting a date to end the expansion of fossil gas pipeline infrastructure may have adverse outcomes. For example, overseas countries relied on existing natural gas infrastructure to make the switch to biogas and hydrogen. Greater understanding of overseas jurisdictions and the New Zealand context is required as some building types could look to eliminate (or adapt) much faster than others. Furthermore, if central government increased the infrastructure capacity in terms of transformers, this would assist in heat pump hot water options being more cost effective and EV charging capacity.
- 8.2 Our previous submission on Building for Climate Change, recommended the Government investigate building types that could achieve a zero-fossil fuel target immediately, whilst ensuring manufacturing or industrial new builds have a more practicable transformative period. We agree with the proposal to phase out fossil-fuel for new builds by 2025 and eliminate in all buildings by 2050, noting that this is easier for new builds and residential than existing commercial and industrial buildings.
- 8.3 We support the Government investigating a mandatory energy performance certificate or programme for commercial and public buildings. However, it is important to note that data collection prior to setting standards is required to ensure we have an accurate understanding of New Zealand buildings performance and how we can best build on these. It is also important to ensure that policy is carefully crafted to make sure that it considers each building type. We are aware that current energy performance rating systems are not appropriate for some building types. For example, NabersNZ is not able to be applied for industrial property. Furthermore, industrial property is much more difficult because the landlord is often not in control, as the tenant controls and manages the site.
- 8.4 We are strong supporters of Government investment in the sector to investigate ways to lower building emissions across the entire process; (e.g., design, planning, construction, and deconstruction). It is important that a whole-system approach to reduction of emissions is considered, and trade-offs are made for better sustainability outcomes, rather than an overfocus on legislative changes with too much red tape.
- 8.5 We acknowledge that businesses will have to change behaviours and adapt to new practices, but they will also be expected to shoulder the brunt of extra costs, levies, and charges.
Furthermore, early adapters will be expected to take the commercial risks associated with meeting the proposed emission/s targets. The Government has far greater capital capacity to make these changes themselves, and leadership is required, alongside incentives for the property sector and business to viably follow suit.

- 8.6 Another incentive is to allow for tax deductions for retrofit strengthening to encourage more owners to undertake the work. Outside of retrofit strengthening, refits and frequent service fits and upgrades are more common for commercial buildings. There could be further incentives and other ways in which the emissions reduction plan could make gains in this area to assist commercial buildings to better comply. In addition, we recommend introducing tax incentives for sustainable buildings in the short term, as they have less demand on infrastructure than non-green buildings.
- 8.7 We have shared our concerns with the Commission's modelling which predicting a 30 per cent reduction by 2035 within the Building and Construction sector. However, this appears to be in contrary to a 2019 report by the Green Building Council which found that "if construction material improvements are made for both residential and non-residential building types a total carbon saving of 13 per cent from all embodied emissions could be made in the short term and 41per cent in the long term." We continue to have other questions with the Commission's modelling, and these were not answered within this consultation document.

#### Commercial and Industrial sectors

- 8.8 It is important that the Government recognise and provide separate targets for the residential, commercial and industrial sectors. Commercial and industrial markets are significantly different from residential and different levers can be pulled within each sector to help reduce overall emissions.
- 8.9 For example, it is hard to see a future commercial and industrial market without steel and concrete. Alternative products may not be best suited. For example, structural seismic requirements mean that timber buildings have large columns that interfere with racking and reduce the efficiency of the space. Alternative options such as low-carbon concrete may be required however, the private sector alone cannot create new markets overnight. We acknowledge that there is scope to improve in these areas. The main challenge the sector face is that there is currently a cost premium and delivery risk associated with adopting lower-emissions building materials. The market shift will not occur overnight and needs Government to incentivise companies with low concrete and steel alongside driving experiments with these materials. The Government could also show leadership in this space by using new low-emissions building technologies in Government projects (in addition to their 'timber first' approach).
- 8.10 The main problem that the property sector, and thus Government face, is the absence of data. An increase in the metrics and data will allow for a starting point, better comparison for proposed reductions and in turn will led to the funding of further research and implementation of new materials and ways to reduce emissions, which in turn leads to behavioural change.
- 8.11 Another way we can better understand market conditions and current data is the establishment of a mandatory system for rating the energy efficiency of office buildings. We recommend the Government undertake research into energy performance schemes used

internationally and work with the industry to determine what energy performance scheme/s would work best in New Zealand, taking into consideration the various building types. (For example, a scheme such as NABERS may be appropriate for office buildings and be able to be extended for retail, but would not be suitable for the industrial sector).

- 8.12 Whichever schemes are adopted, we recommend making ratings publicly available at the change of sale points. We recommend concentrating on a commercial office based scheme and once a successful implementation and understanding of the system for office buildings has occurred, closely working with the sector and equivalents in its extension to other building types such as; retail. Further research is required for the industrial sector.
- 8.13 The consultation document recommends the Government develop a contestable fund to help drive low-emissions innovation and encourage emission reductions within the building design and product innovation space. We strongly support this and recommend the Government provide further incentives by investigating the opportunity to meet premiums for the difference between standard materials and green materials. For example, meeting the difference between standard concrete and green concrete in the interim will help promote and make feasible alternative options. Similar to LED lighting, the market over time will develop and materials such as green concrete could become the standard. However, in the meantime we need a gap-meeting solution to promote and encourage new green markets to emerge.

#### Residential market

- 8.14 New Zealand's residential market is two to three times the size of the commercial market. We encourage the Government to look at where smaller moves within the new-build residential market could result in bigger impacts. For example, incentivising installation of solar panels and water retention for new builds.
- 8.15 One suggestion that could help contribute towards behavioural change is making HomeStar ratings mandatory on LIM reports.

#### 9. Waste

- 9.1 We support the need to reduce waste from construction and demolition. A good example of reducing waste is Wellington's CentrePort demolition of the BNZ building which suffered by the November 2016 Kaikoura earthquake. CentrePort has reported that 95 per cent of the building by weight will be recycled, with about 30,000 tonnes of concrete in the BNZ building being crushed at CentrePort's recycling plant and will be used as gravel fill at the port.
- 9.2 We note that concrete crushing and recycling is however limited to where the machines are located within New Zealand. Once transmission gully is completed the machines may be relocated. We recommend central government look at setting up strategic locations to provide this type of machinery.
- 9.3 We are aware that BRANZ has a recycling directory of who takes recycled building materials. We recommend the Government look into whether building consents that involve any demolition have a requirement to recycle as much as possible.



#### 10. F-gases

- 10.1 We are supportive of moving to lower-GWP refrigerants for property applications overtime. However, the F-gases proposals may cause difficulties for existing buildings. We recommend working with the property sector experts within this field to ensure there are no unidentified impacts on building owners having to reach compliance (e.g. air conditioning units). It is unclear what impacts the current proposal will have for the sector, and flexibility will be required to allow for better overall environmental impacts.
- 11. Cross partisan support and alignment across Government programmes
- 11.1 Cross partisan support is required to provide the sector with certainty. Furthermore, greater alignment is required across Government programmes and policies. For example, the recent Resource Management (Housing Supply and Others) Matter Bill will require emission reduction guidance for residential developers.

#### 12. Conclusion

- 12.1 Property Council is grateful for the opportunity to provide feedback on the consultation document Te hau mārohi ki anamata: Transitioning to a low-emissions and climate-resilient future.
- 12.2 We support the Government's overall intentions to reduce emissions, however, we are surprised by the lack of detail within this consultation document. For emission reductions to occur, we need to know the base level of our residential, commercial and industrial buildings in order to set realistic and aspirational goals. We urge the Government take a leadership role within the building and construction space to work closely with the sector and develop and provide incentives to shift behavioural changes.

#### 12.3 For any further queries contact



Leonie Freeman Chief Executive, Property Council New Zealand



# **Rail & Maritime Transport Union**

# Submission Emissions Reduction Plan, Transport

### **Opening Statement**

This submission focuses on rail transport as a means of lowering transport emissions in the transport sector. Extending railway electrification and expanding the national passenger rail network are two areas which could make a material difference to emissions reduction.

Rail transport enjoys inherent environmental advantages due to the low rolling resistance of trains caused by low friction conditions that steel-wheels-on-steel rails provide. Low rolling resistance means that over four times less energy is used compared to road transport to move freight and people - less energy used equates to less emissions being created. Rail is also well placed to take advantage of clean electric energy via electrification.

Furthermore, modern electric locomotives and passenger equipment can generate electricity for the national grid, when breaking and travelling downhill, using 'regenerative-breaking' speed retarding technology, further reducing energy usage and emissions pollution.

Moreover, rail transport avoids and reduces road traffic congestion, helping to reduce unnecessary pollution caused by road traffic stuck in burgeoning congested and gridlock city roads.

The '*Transitioning to a low-emissions and climate-resilient future*' discussion document and '*Emissions Reduction Plan*' are mostly silent and lacking in detail / specifics around how the rail sector can be used to help lower transport emissions in New Zealand.

Reference is made to implementing the '*New Zealand Rail Plan*'; however, this conservative document mainly focuses on rebuilding the current worn-out rail network, replacing like-for-like following decades of underinvestment and neglect. Although the *NZ Rail Plan* makes good recommendations to Government, it is not transformative from an emissions reduction perspective and only makes vague mention of electrification extension, for some time in some distant future. Also, other than some limited tourism trains and Auckland & Wellington urban passenger operations, there is no mention of meaningful development for regular connector style long-distance passenger rail to link regional communities, towns and cities.

Lack of investment for transformational rail improvements is at odds with international strategy on national emissions reduction planning.

### KiwiRail, National Rail Network Provider - Emissions Reduction Mandate

#### (Transitioning to a low-emissions and climate-resilient future - discussion document) Government's role in reducing transport emissions, page 56, bullet point 4 - Leading by example and setting expectations - "Incorporate emissions reductions into their decision-making"

KiwiRail should be included in the list of organisations which must "incorporate emissions reduction as a priority into their decision-making", ie NZTA, Maritime NZ, the Civil Aviation Authority.

KiwiRail is the rail network provider, they maintain track infrastructure and prioritise improvements, they heavily influence the direction of future development for the national rail network. KiwiRail also operate trains, alongside other independent run rail service operators i.e., Transdev Wellington and Auckland One Rail.

KiwiRail's State-Owned Enterprise status is at odds with reducing emissions in New Zealand. The SOE model limits and controls KiwiRail's decision making to profit motivation, this alters and limits their thinking around network improvements - resulting investments are not always delivering the best emissions reduction results for New Zealand. \*A recent example, new build replacement Cook Strait ferries will not provide the lowest emissions pollution operation, KiwiRail's decision was not aligned to government emissions reduction goals.

Consideration should be given to appointing a more appropriate structure for KiwiRail, moving away from the current SOE model would allow for better decision making around infrastructure investments that will optimise emissions reduction, community and social good.

### **Extending Electrification of key Rail Routes**

#### (Transitioning to a low-emissions and climate-resilient future - discussion document) How we plan to reduce emissions in the transport sector, page 56, Number 3 - Beginning work now to decarbonise heavy transport and freight.

Rail enjoys inherent environmental advantages; these advantages can be significantly enhanced through electrification. Modern electrified railways can provide zero emissions freight movement and passenger travel for companies and individuals who wish to lower their carbon footprint, reducing travel times and decarbonising energy usage, modern electric locomotives and passenger equipment can also utilize regenerative breaking speed retarding technology, further reducing overall energy usage.

Electrification would improve both passenger and freight operations, for example: completing electrification between Pukekohe to Hamilton, Te Huia passenger trains could employ new electric trains and potentially operate over the new CRL tunnel in Auckland, freight trains could operate using faster electric locomotives between Auckland and Palmerston North by linking into existing electrified rail lines south of Hamilton. Improvements to operations would include

Electrification might include - but not limited to:

- Extend the DC system Waikanae to Otaki (extend Matangi trains to Otaki, thus completing the Wellington suburban rail system)
- Extend electrification and suburban rail network between Sawnson and Helensville
- Complete the North Island Main Truck (NIMT) Waikanae to Palmerston North (AC north of Otaki, dual voltage locomotives / passenger equipment would operate between Wellington and Palmerston North, onto Auckland)
- Complete the North Island Main Truck (NIMT) Pukekohe to Hamilton (Papakura to Pukekohe under construction)
- Hamilton to Cambridge (rail freight and Te Huia passenger rail extension)
- Hamilton to Tauranga
- Swanson to Whangarei (including a program of track improvements to facilitate greater use of North Port and also encourage growth in other rail freight and passenger traffic from the Northland region)

- Upper Hutt to Masterton (mitigate Rimutaka Tunnel ventilation issues, increase rail freight and passenger rail service on this route)
- Christchurch urban rail network Rolleston, Rangiora, Lyttelton.



### **Passenger Rail Network**

(Transitioning to a low-emissions and climate-resilient future - discussion document)

# Transport - Why reducing emissions from this sector is important, page 55, second paragraph - "Decarbonising transport also offers opportunities to improve the wellbeing of New Zealanders. Air pollution, crashes and congestion from traffic impose a large cost on our health, environment and the economy. For many people and communities, transport is not affordable or accessible. The transition could make transport more inclusive, safe, healthy and resilient, and better support economic activity".

# Investigate ways to reduce aviation emissions, page 73, first paragraph - "Many called for more 'avoid' and 'shift' interventions to reduce flying".

Well-functioning passenger rail with national coverage has the potential to lower transport emissions pollution, improve people's lives by connecting regional communities to towns and cities, save lives, avoid and lower road traffic congestion, improve transport resilience and provide low-to-zero emissions travel choices for organisations and individuals who wish to lower their emissions pollution.

Central Government leadership is needed to develop inter-regional / long-distance / inter-city passenger rail (all the same thing). KiwiRail is holding back passenger rail development in New Zealand, due to the limitations of being an SOE, also the fact that there is no mechanism for development of or the funding for, national network passenger rail expansion.

A few Local Government authorities are doing some really good work in the area of inter-regional passenger rail; however, it is unrealistic to expect them to have the big picture view required, mandate, resources or even the expertise to effect change that will result in the formation of a national passenger rail network.

Central Government should seriously investigate establishing a national passenger rail authority - much the same as Amtrak (USA), VIA Rail (Canada), PRASA (South Africa), Great British Railways (UK).

### National Passenger Rail Authority / Agency

(Transitioning to a low-emissions and climate-resilient future - discussion document) Focus 1: Reducing reliance on cars and supporting people to walk, cycle and use public transport - page 66, last paragraph.

#### Initial actions.

We also need to provide better travel choices in New Zealand's regions and rural areas, including by public transport. Too many parts of regional New Zealand are only accessible by private vehicle.

#### In the first budget period, we will:

- *"Establish a clear set of principles for planning and funding different kinds of public transport, within and between towns and cities, to enable the development of a national public transport network".*
- "Develop clearer guidance on the viability of inter-regional passenger rail, coach, and bus services, and improve the way these projects are planned, funded, and delivered".

A new national passenger rail authority would provide the platform needed to develop the network; this authority should be tasked with the following directives:

Identify and evaluate new routes and opportunities, planning for the development of routes and new services, assess station locations and relocate or effect upgrades, engage and consult at all levels, coordinate connections and integration with other systems and modes, arrange bicycle storage and possible bicycle hire centres at stations for beginning and end travel options, set timetables and manage standards, project manage upgrades, operate or contract out service operations.

#### National Strategy -

#### Projects (not limited to) which should be investigated:

#### Night (Sleeper) Trains <sup>1</sup>

Modern night trains are the only realistic way to attract people away from very polluting domestic air travel, especially between Auckland and Welington, New Zealand's busiest travel route.

Auckland to wellington is an almost ideal route for this type of service, convenient departure and arrive times from four major cities, two emerging passenger rail corridors (Auckland to Hamilton and Wellington to Palmerston North) which could benefit from later evening departures, ski and hiking attractions mid-point, large regional areas which are poorly served by quality public transport, 57% of NZ's population lives along the rail route between Auckland and Wellington.

Providing sleeper and regular class accommodations can cater to various expectations, requirements and also social / demographic markets. Other routes might also be worth investigating, such as: Wellington (ferry connection) - Picton – Christchurch – Dunedin - Invercargill.

Night sleeper trains are very much a growth area in many countries around the world. With a view to reducing emissions pollution and over-reliance on road / air transport, investment and expansion of night train routes is taking place.

<sup>1.</sup> <u>https://www.newsroom.co.nz/a-night-train-to-break-air-travel-addiction</u>

https://www.wgtn.ac.nz/ data/assets/pdf file/0006/1942332/WP-21-11-decarbonising-the-public-sector.pdf

#### Inter- Regional Modern 'Mixed Trains' (Passenger & Freight)

Modern 'mixed trains' could provide a nifty, frequent and flexible service over quieter regional lines, they could allow greater access to passenger and freight rail service over regional routes, and also over shorter journeys.

Mixed trains would combine passenger and freight operations, share resources and provide rail connections on regional lines that might otherwise appear marginal, if operated in isolation.

Railcar with underfloor engines, driver cabs each end, passenger accommodation and easy side access roll-on-roll-off flat top cars (for container traffic) would need to be specially designed. Routes would be equipped with passenger platforms and at some locations both passenger and freight transfer facilities.

Somes busier routes could also benefit by adding mixed train operations, so as to provide more frequent and flexible passenger rail and rail freight service, such as: Picton to Christchurch / Christchurch to Dunedin etc.

Mixed train routes could include:

- Auckland to Whangarei to Opua
- Auckland Rotorua
- Auckland to Cambridge
- Auckland to Tokoroa
- Auckland to Whakatane (possibly Kawerau)
- Auckland to New Plymouth (via the Stratford to Okahukura Line)
- Wellington to New Plymouth
- Wellington to Napier to Gisborne (via both the NIMT and North Wairarapa Lines)
- Picton to Christchurch
- Christchurch to Hokitika
- Christchurch to Westport (via Greymouth)
- Christchurch to Dunedin
- Dunedin to Invercargill

#### **Corridor Service**

Defining passenger rail 'corridors' is a good way to highlight and standardise routes with high travel demand. Core train timings need to be considered to meet specific demands, however, any other trains, such as through night sleepers / mixed trains, can be added and to a corridor timetable, share ticketing and be promoted as a corridor service while operating between defined points. The more trains available on corridor service the more attractive these routes will appear. Two obvious corridors are Palmerston North to Wellington, Hamilton to Auckland. This concept may be developed in other areas as the national network grows.

#### **Standardised Railcar Fleet for Regions**

A standard fleet of railcars should be purchased for use on inter-regional routes. These could be fitted out as appropriate for the intended task, such as higher density seating for commuting, buffet and catering facilities added for longer journey operations.

#### Tourism

International tourism markets will likely be affected for some time to come, due to Covid travel conditions, higher international travel costs, also New Zealand's isolated position on the globe in relation to climate change concerns and "flight shaming". Domestic and international tourism could, however, be accommodated for by providing premium / 1<sup>st</sup> class accommodation on trains.

#### City / Urban Commuter Rail

Cities are large producers of emissions pollution. Developing zero emissions electric city rail solutions is desirable and needs to be a priority in cities such as Christchurch and Dunedin.

Investigating other opportunities should also take place, such as Tauranga to Mt Maunganui, Napier to Hastings etc. Standardising (as much as possible) city train rolling stock is desirable, new train orders could then be combined to reduce overall costs, including gains in maintenance and training efficiencies.

Interestingly, South Africa operates a particularly good standardised bulk equipment concept.

#### **Integration with Modes & Bicycles**

Investigate opportunities for connections between passenger rail and other modes. Develop bicycle stowage and possible short term bike hire at key stations.

### **Rail Freight New Zealand**

(Transitioning to a low-emissions and climate-resilient future - discussion document) How we plan to reduce emissions in the transport sector, page 56, Number 3 - Beginning work now to decarbonise heavy transport and freight.

The *NZ Rail Plan* will eventually deliver a more resilient and reliable rail freight network, this will without doubt make transporting additional freight by rail more attractive and result in more freight being transported by rail. Due to this, emissions reduction will occur, even under the existing rail freight operations model, this due to rail being more energy efficient and creating 70% less emissions than road transport <sup>2</sup>

It has to be said, however, that simply referencing the *New Zealand Rail Plan* is a little lazy, it does not tap the full potential rail can contribute towards emissions reduction in New Zealand.

#### **Electrification of Key Routes**

Opportunities exist to modernize rail operations, improve efficiency and decarbonize rail freight by completing and extending electrification of key routes. This investment would improve travel times, lower energy consumption, offset energy use through regenerative breaking technology, provide a zero-emissions network operation on electrified lines - this in turn would make rail freight much more attractive and increase rail freight usage beyond the current 'fix the network' approach.

#### **Regional & Inter-regional Rail Freight**

Opportunities exist for nifty, fast and flexible modern 'mixed trains' to operate over regional lines, as previously mentioned in the National Passenger Rail projects section.

This concept could provide rail freight with opportunities to improve flexibility on regional / inter-regional and shorter haul freight demands.

Purpose-built railcars, (including separate passenger accommodation) with side access roll-on-roll-off flat top cars, easy side sliding rollers for transfer of containers onto dedicated freight transfer platforms. These would be sited at key locations and allow for quick flexible transfer of containers enroute.

<sup>2.</sup> https://www.kiwirail.co.nz/our-story/sustainability/environment/



#### FINAL submission to the MFE Consultation document: Te hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future

Thank you for the opportunity to provide feedback on Aotearoa New Zealand's first emissions reduction plan.

Refining NZ, based at Marsden Point in Northland, currently operates the country's only oil refinery, and will continue to do so until April 2022. Currently, we refine and supply transport fuel (gasoline, diesel, jet fuel and bunker fuels) directly to Auckland via the Refinery to Auckland Pipeline (RAP) and fuel for distribution nationwide by coastal tanker or truck.

From April 2022, we will become Channel Infrastructure, New Zealand's leading independent fuel infrastructure company. The Company will utilise the deep-water harbour and jetty infrastructure of Marsden Point to import refined fuel, owned by its customers. This will replace the crude oil that our customers import today for refining, and we will distribute this primarily to the Auckland and Northland markets.

As noted in the Government's consultation document, when we make this transition and stop refining crude oil at Marsden Point, there will be a 98 per cent reduction in Scope 1 and 2 carbon emissions for the site delivering around 1/3rd of the emissions reduction required to meet New Zealand's first emissions budget, as noted in the consultation document.

As a business, we are strongly committed to our people, our community, our environment, and our economy. We are pleased to see the emphasis in the consultation document on ensuring that New Zealand's transition to a low-carbon economy will be both economically viable, and socially acceptable, however we urge the Government to work more closely with industry to plan for the future in a way that does not have unintended consequences. Without a cohesive plan to deliver on our environmental goals, we are at risk of becoming a high-cost, low-wage economy, where New Zealanders' standard of living declines compared to the rest of the world, and New Zealanders are worse-off as a result of changes that are decades in the making.

Final decisions on emissions reductions measures must be informed by robust economic analysis – particularly when it comes to New Zealand jobs and economic activity, and backed by Government investment in a Just Transition, which at the moment is lacking. Long-term decisions involved in infrastructure and energy investments must be based on the highest quality data, as they are in the private sector, and must consider the infrastructure requirements that will enable this energy transition.

# 1. To meet the Government's goal of directly replacing fossil fuels with renewable sources, investment will be needed to encourage industry development.

It is pleasing to see reference throughout the consultation document to the Government's role in supporting innovation as a pillar of emissions reduction interventions. We do not yet have all the answers for the many challenges we will face along the path to decarbonisation.

It is critical for Government and business to work collaboratively to assess the options and create incentives for businesses to help find the best solutions. Together we can move at a pace where our aspiration is matched with our plans for delivery, but the Government has a key role to play both in ensuring the policy levers are sending signals to the private sector that allow for good long-term decision making, and by incentivising research, science and innovation that will lead to lower emissions practices.

#### Refining NZ

Port Marsden Highway, Ruakaka, Northland 0171, Private Bag 9024, Whangarei 0148, New Zealand



In addition, planning needs to consider the infrastructure required to support Aotearoa New Zealand's energy transition. Refining NZ have offered use of our site, and access to the technical capabilities and staff we have today, to support research initiatives designed to identify and solve the next scientific challenge.

Based on advice received from the Government, we will now start to plan for how our business can best support the further decarbonisation efforts of New Zealand into the future. We will be investigating opportunities for our Marsden Point site to facilitate the importation of BioFuels and other competitive green fuel supplies for use in heavy transport and aviation, as well as renewable electricity and storage opportunities.

We welcome indications that the New Zealand Government wants to increase research, science, and technology activity to two per cent of GDP, and we encourage the Government to partner with the private sector to achieve this ambition.

# 2. The BioFuels Mandate as currently written will mean New Zealanders won't reap the benefits of this new industry and are likely to be further penalised through higher prices.

The Emissions Reduction consultation document refers to the upcoming BioFuels Mandate as a key policy initiative designed to support the development of a bioeconomy. The consultation document also notes that fostering the bioeconomy is an opportunity to reduce our reliance on imported resources and develop greater resilience in our supply chains. We believe the structure of the Biofuels Mandate, and Government decisions to date, will not achieve this outcome as there are no incentives (either policy, or financial) to encourage local biofuels production. As referenced in our submission on the Biofuels Mandate, countries that have been successful in establishing supply of biofuels have done so through incentives to attract this supply to their regions and offset the increased costs for their consumers.

Based on advice received from the Minister of Energy and Resources, Refining NZ will focus our future planning on how we can best support New Zealand's transition to a lower-carbon economy through use of our infrastructure to support the importation of biofuels, including sustainable aviation fuel, and the contribution that we can make to ensuring a secure supply chain for the mix of future fuel options that New Zealand will require. At a practical level, the aforementioned shift in focus will see us proceed with the permanent decommissioning of assets that will not be directly required to run the import terminal from next year.

Given the available tank storage capacity that we have at Marsden Point, our proximity to the Auckland market, and management of the Refinery to Auckland pipeline – which remains the lowest carbon emission option for delivering fuel to New Zealand's largest market – we stand ready to support our customers and the Government with the implementation of this policy.

Unlike crude-oil based refined fuel markets, the global market for new fuels such as Biofuels, is not as well developed. There is limited global production which is often supported by Government subsidies, and the market overall is not well traded, or transported. To be fully reliant on importing all Biofuel requirements will mean New Zealand is at the mercy of a number of external and currently unknown factors which will have an impact on the reliability and cost of imported fuels.

While New Zealand has been dependent on imports of crude-oil and refined fuels for its fuel requirements up to now, the development of a local biofuels industry provides the opportunity for New Zealand to become more self-sufficient in its future fuels supply.

#### Refining NZ

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In addition, prior to mandate implementation, more work will be required to understand the infrastructure requirements to support biofuels storage, blending, and distribution. We encourage the Government to engage across industry to determine what infrastructure is required to efficiently supply biofuels in New Zealand and ensure that industry is set up to support the Government's ambitions for a transition to a low-carbon future. Our submission on the BioFuels mandate includes greater detail on the technical considerations that will be required before implementation of the Mandate. We note that while the Biofuels Mandate is due to be finalised by the end of this year, there has been no follow up from MBIE to the matters raised in our submission on this mandate made in July.

We note there is limited mention in the consultation paper around the reduction of aviation emissions; our view is that a plan for reducing aviation emissions will need to be included in future emissions budgets, particularly as international aviation and tourism recovers as expected in coming years. We are active participants in the Air New Zealand-led Public-Private Partnership process designed to bring better coordination to approaches to decarbonise aviation, through which we expect BioFuels will play a major role.

Refining NZ believes Aotearoa New Zealand is faced with great opportunity in the Biofuel realm. However, Government support will be required in helping to determine the optimal biofuels solution for New Zealand, given the complex link that exists between feedstock supply, conversion technologies and supply chain logistics. Further work must be done to ensure we can establish a new industry that is feasible, economic, and competitive.

3. Marsden Point has the ability to become an energy hub for the north, however the time to act is now, otherwise the opportunity will be missed.

Alongside planning to safely manage our transition from an oil refinery to an import-terminal, we are assessing other opportunities for the use of our site. Our engineering and design planning indicates that Channel Infrastructure only requires 35 per cent of useable land and 20 per cent of existing tank capacity for the initial shared terminal. We are investigating a number of site repurposing opportunities which would allow Marsden Point to contribute to the energy challenges New Zealand needs to solve, including in the near-term increased fuel storage at our site to ensure New Zealand's fuel security.

Over time, as our energy needs transition to renewable sources, energy storage will become an even more important component of New Zealand's energy system. To deliver on the potential at Marsden Point, we would like to see any assessments of energy storage solutions for New Zealand to also consider any potential repurposing opportunities of our existing assets for this purpose (for example, crude storage tank capacity).

We are particularly focused on the near-term opportunities which would attract new skilled jobs to the region, replacing those that will be lost through a terminal transition. As noted in this submission, we are also now focused firmly on how our site can support the importation of New Zealand's future fuels requirements.

#### 4. Affordable electricity is the foundation of the carbon budgets, but not a reality today.

Electricity costs in Aotearoa New Zealand are globally uncompetitive and unaffordable, and while the ambition remains to move to renewable sources, the current market is functioning ineffectively. Current regulation and industry structure are not incentivising market participants to deliver the affordable, reliable, and lower carbon energy that Aotearoa needs now, let alone when the predicted demand increases in coming years, and transmission and distribution costs for our region, as signalled by the Electricity Authority's draft TPM, are increasing significantly.

### Refining NZ

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www.refiningnz.com



Current models of socialising these costs does not incentivise providers to drive the costs down. Large users face an unaffordable cost burden and over time this is likely to force their exit. In our case, we are investigating the development of our previously announced solar farm, Maranga Ra, which will mean that when we make our transition to Channel Infrastructure, we could be completely self-sufficient with our electricity needs. Where it relates to supporting the ambitions of this consultation document, this is a positive step, however in practise, selfsupply of electricity will only spread the increased costs across a smaller base of remaining users, which in Northland is predominantly local households and the community. We urge the Government to consider central planning for such major system changes otherwise our country will achieve inefficient outcomes and unintended consequences, which in this case, will be borne by the New Zealand households of the future.

#### 5. A planned approach is critical to ensure a fair and just transition for the regions

This consultation document recognises that the carbon transition will disproportionately impact certain parts of our economy, in particular the regions. In Northland, the Marsden Point refinery supports many highly-skilled jobs and provides base business to several local businesses. It also makes a significant contribution to the regional economy.

Without action, places like Northland will be adversely impacted. They will unfairly bear the cost of carbon transition, losing economic activity and jobs in their region. We have seen no evidence that the Government is committed to supporting a Just Transition for Northland, in the same way that resources and a region-wide plan have been established for areas such as Taranaki and Southland. In working with local and central Government throughout our transition from refinery to import terminal, our experience has been that our local economic development agency is not resourced to assess and develop plans to mitigate the impact of our transition and that central Government has not been prepared to play a role.

We need to find new opportunities to attract skilled jobs and economic activity to the regions, to replace those that will be lost through the carbon transition.

**Refining NZ supports the Commission's recommendation that Aotearoa New Zealand needs an Energy Strategy.** This Energy Strategy must address today's challenges and those that will emerge in the future. These include:

- Market mechanisms and industry structure that supports the most efficient pricing and supply of variable renewable energy and firming capacity, through dispatchable supply and storage.
- Incentivising the development of the best electricity storage options to address both today's dry year challenge and tomorrow's need to firm an increasingly renewable supply.
- Matching the timing and investment horizons for phasing out of existing gas firming capacity with new storage solutions.
- Consideration of options such as carbon capture, utilisation and storage (CCUS), Green Hydrogen / Ammonia production and LNG imports as part of the transition pathway.
- The infrastructure requirements to support cost and carbon efficient energy and fuel supply, storage and delivery.
- A centralised planning system that ensures sectors of society are not unfairly bearing the cost of New Zealand's energy transition.

We know that economic considerations are the most challenging aspect of decarbonisation. Fossil fuels have played a critical role in our energy mix for more than a century because they are energy rich, low-cost to produce and easy to transport, but that does not mean that a fair and equitable transition is not possible. Refining NZ, and Refining NZ

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our new business Channel Infrastructure stand ready to support the Government, and Aotearoa New Zealand, with the transition to a lower-carbon economy.

My team and I are here to support the Government with this work as it is important for all New Zealanders that we get this right.

Nāku noa, nā



Naomi James Chief Executive Officer

| From:    |                                     |
|----------|-------------------------------------|
| Sent:    | Monday, 22 November 2021 7:05 an    |
| To:      | climate consultation 2021           |
| Subject: | Limit carbon offsetting on farmland |

### MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

To the Government.

I am writing to voice my concerns regarding carbon offsetting on our productive food producing farmland. I believe this is very short sighted and irresponsible of this Government. New Zealand is uniquely situated to enjoy a temperate climate for year round pasture production and allows for sustainable food production. To allow carbon speculators to purchase this land and blanket plant it in exotic trees is wrong and does not fix climate change at all! There are so many areas in the world that can grow trees but not food like New Zealand can. All this does is destroy rural communities and businesses and the dreams for young farmers with ambitions to farm.

Please limit carbon offsetting on our beautiful farmland. People from around the world come to experience and see our beautiful country of mountains, bush and farmland. NOT a country blanket planted in pine forest.

Regards,

Get Outlook for Android

23 November 2021

By email: climateconsultation2021@mfe.govt.nz

# Rinnai New Zealand Submission on Te Hau Mārohi ki Anamata – Transitioning to a low-emissions and climate resilient future

Tēnā koutou e te rangatira mā o Te Manatū Mō Te Taiao

Rinnai New Zealand is committed to helping New Zealand achieve the emissions budgets. Our submission is a genuine effort to engage and suggest a way to manage the transition in the most effective way and with the least disruption for New Zealanders and the current power and fuel infrastructure of New Zealand. Rinnai New Zealand has been the primary supplier of Gas Water Heating and Space Heating in the New Zealand market for the last 50 years. Our products provide utility and meet the basic needs in provision of hot water and heating for over 1 million Kiwi homes, businesses, schools, medical and care providers.

We realize that Gas is a fuel in transition and through collective action of both fuel suppliers and distributors and appliance manufacturers and suppliers we are confident that gas can play a significant and diverse role in meeting New Zealand's pledge for net zero carbon by 2050.

Our submission focuses on the issues pertaining to Natural Gas and LPG in the transition to a low carbon economy and has a main recommendation in response to Te Hau Mārohi ki Anamata. Our main recommendation is that Government introduce a Mandate for renewable gases requiring procurement targets and goals for renewable LPG and renewable Natural Gas through to 2050.

We have work underway now with our products to ensure that they will be compatible with any renewable gases that may be introduced. Initially as an augmentation to fossil gas and more long term with solely renewable gases. We need the assurity that a mandate would being to enable us to complete this work.

Work is well underway to introduce renewable Natural Gas and renewable LPG into homes and businesses from 2025. The industry is investing in feasibility studies and we will assist with pilot projects that support the viability of phasing in renewable Natural Gas and renewable LPG into existing New Zealand energy networks.

The policy and regulatory environment are critical. With the right policy in place, the industry can start to introduce low emissions alternatives in the next few years and scale up significantly by the end of the decade.

Other Recommendations we would make are:

There are substantial opportunities for the circular economy in the 'waste' feedstock needed for renewable LPG and gas, while at the same time providing regional prospects for industry, local communities, iwi, and Māori businesses, to be part of a carbon zero future. The Gas industry is already working with a number of these groups to ensure opportunities are understood and supported.

We do not support a ban on new gas connections, which would be detrimental to achieving the Government's renewable energy goals, Moving users who would connect to a Gas water or Space Heating option over to the likely alternative which is mains electricity will place additional load onto the network at the same time as increasing demand for electrical power is required as the vehicle fleet decarbonizes. As renewable gases come on stream we will need infrastructure in place to deliver these gases to consumers. It is essential that pipelines, connections and appliance infrastructure are maintained to support future demand for renewable gas and renewable LPG. Prematurely limiting or closing off these options undermines efforts to develop a renewable gas industry and directly harms energy users in hard to abate sectors that are expected to create significant economic opportunities over the coming years (such as hospitality, horticulture, and food processing).

Rinnai New Zealand is committed to working with government, our customers, communities and iwi to ensure an orderly and equitable energy transition. We strongly urge government to involve the wider gas and LPG Industry as it considers the feedback received from the discussion document and it forms details of the emissions reduction plan.



Managing Director

Rinnai New Zealand Limited

#### 23 November 2021

### Rinnai New Zealand Limited Submission on Te Hau Mārohi ki Anamata – Transitioning to a lowemissions and climate resilient future

#### PURPOSE

The purpose of this submission is to provide feedback on the high-level Te Hau Màrohi discussion paper; to reinforce the criticality of gas and LPG as fuels in transition; and to propose specific steps the government can take to ensure an orderly and equitable transition.

A key option available to decarbonise New Zealand's energy system is to use existing gas infrastructure and networks to transport zero carbon gas. The most promising options for decarbonising gas infrastructure are to incorporate biogas and hydrogen into natural gas systems and to incorporate bio-LPG and biomass derived dimethyl ether (rDME) into LPG systems.

Over the past few years, Gas NZ members (representing the LPGA and GANZ) have been advancing commercial and R&D opportunities for these gases. These opportunities are consistent with the Climate Change Commission's guiding principle of keeping options open – New Zealand will need all possible tools, including zero carbon gas, to achieve net zero by 2050.

#### Using Hydrogen Blends with Natural gas or rDME Blends with LPG in domestic and commercial gas appliances

There is considerable work being advanced by various other jurisdictions on the use of Hydrogen blends with Natural Gas and rDME and LPG blends, however current regulations and Appliance safety regulations do not cater for the blending of Hydrogen with Natural Gas or rDME with LPG.

BSI, a certification body in the UK, is actively working on a testing regime to understand the performance of standard products on a Hydrogen Natural Gas blend and rDME LPG blend and preliminary appliance testing in Japan on a range of appliances has shown normal operation for blends of 20% or higher on each mix respectively.

To further advance renewable gases we would work with the regulator to ensure:

- 1. Regulatory changes and Standards for a Hydrogen and Natural Gas blend and LPG and rDME blend are required including safe handling, blending, gas specification and possibly, acceptable contaminant levels.
- 2. Appliance safety regulations are required that demonstrate safe and durable appliance performance for a blend of Hydrogen and Natural Gas and LPG and rDME up to the maximum blend percentage permitted.

3. Given the large number of appliances in the market that would need to operate safety and effectively on a Hydrogen and Natural Gas and rDME and LPG blend without modification, testing would need to provide confidence

#### SETTING A RENEWABLE GAS MANDATE

Consistent with the government's sustainable transport biofuels mandate proposal, we suggest that the best option to reduce emissions from natural gas and LPG is to set a renewable gas mandate (including renewable gas, renewable LPG and hydrogen).

Adopting a similar mandate for gas as proposed for biofuels aligns with government's response to a similar set of circumstances to address hard to abate emissions, its desire to repurpose existing infrastructure, and challenging economics of low emissions alternatives even with a relatively high carbon price.

At its most basic the mandate could focus on home and businesses heating, water and cooking, and would see escalating quantities required from 2025 to 2050. However, a more ambitious mandate could also include other gas users, for example process heat and possibly even gas for electricity generation.

#### PROPOSALS THAT SUPPORT THE OPTION OF ZERO CARBON LPG AND GAS

Acknowledging the potential of renewable LPG and Natural Gas, we propose government undertake the following:

- A. Set a renewable gas mandate, namely that a proportion of Natural Gas and LPG used in buildings and homes is to come from renewable (non-fossil fuel) source. This mandate should apply from 2025 at a low level, introducing growing renewable fuel supply requirements through to 2050.
- B. Direct the GIC to regulate renewable LPG and renewable Natural Gas, oversee a certification scheme, monitor security of supply and report publicly on the emissions profile of the gas and LPG industries.
- C. Engage again with the industry, to ensure we have opportunity to input on the detail of these recommendations before the Carbon Emissions Plan is finalised.
- D. Provide for the explicit recognition of the opportunities for renewable LPG and Natural Gas as in the national energy strategy, with clarity on expected progress and check in dates to assess whether these options are realising their potential.

#### FINAL NOTES

• The table below outlines our response to specific questions from the discussion paper and forms part of our submission.

|  | ENERGY QUESTIONS  |
|--|---|
| Energy Strategy  |   |
| 58. In your view, what are the key<br>priorities, challenges and opportunities<br>that an energy strategy must address<br>to enable a successful and equitable<br>transition of the energy system? | Gas as a fuel in transition, not only a transition fuel, and we urge Government to put Natural Gas and LPG into its plan to meet New Zealand's pledge for net zero carbon by 2050.<br>We also urge the government to involve the Natural Gas and LPG industry as it considers the feedback received from the discussion document and the details of the carbon emissions plan is formed.  |
| 59. What areas require clear signalling to set a pathway for transition?   | We recommend the government set a renewable gas mandate mandate (including renewable LPG and hydrogen).<br>This is consistent with the government's sustainable transport biofuels mandate proposal. Adopting a similar mandate for gas aligns with government's response to a similar set of circumstances to address hard to abate emissions, desire to repurpose existing infrastructure, challenging economics of low emissions alternatives even with a relatively high carbon price.<br>Suggestions such as banning new connections, would be detrimental to achieving the Government's renewable energy goals, including unnecessarily closing off options like hydrogen. It is essential that pipelines, connections and appliances infrastructure are maintained to support future demand for renewable Natural Gas and renewable LPG. |
| Setting targets  |   |
| 60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?   | We recommend a renewable gas mandate and seek to work with government to determine goals and targets that would achieve the emission reductions required to meet New Zealand's carbon budgets.  |
|  |   |



|  | Fortunately, much of this energy demand may be implemented without increasing existing electricity system peaks (effectively flattening the load curve). However, energy demand served by gas pipelines will be more difficult to transfer since gas and electricity have coincident demand peaks (both supply energy on cold, winter mornings and evenings).   |
|--|---|
|  | BUILDING SECTION  |
| Question   | Comment   |
| 72. The Building for Climate Change<br>programme proposes capping the total<br>emissions from buildings. The caps are<br>anticipated to reduce demand for fossil   | Work is well underway to introduce renewable Natural Gasas and renewable LPG into homes and businesses starting 2025.<br>The industry has invested in studies and pilots that support the viability of phasing in renewable LPG and   |
| time for the possibility of low-emissions<br>alternatives. Subsequently, the<br>Commission recommended the   | the right policy settings in place, blends can start in the next few years.<br>We share the Government's view that there are hard to abate activities that cannot be economically   |
| Government set a date to end the<br>expansion of fossil gas pipeline<br>infrastructure (recommendation 20.8a).<br>What are your views on setting a date to<br>end new fossil gas connections in all  | electrified due to the high temperatures and scale involved. It is forecast that renewable electricity alone will not achieve the government's proposed energy targets and natural gas and LPG will be needed for some years yet to maintain some high value processing and manufacturing activities that are essential to our economy and to ensure thriving communities through the transition.                                     |
| buildings (for example, by 2025) and for<br>eliminating fossil gas in all buildings (for<br>example, by 2050)? How could<br>Government best support people,<br>communities and businesses to reduce  | There are substantial opportunities for the circular economy in the 'waste' feedstock needed for renewable LPG and Natural Gas, while at the same time providing regional prospects for industry, local communities, iwi, and Māori businesses, to be part of a carbon zero future. We are already working with a number of these groups to ensure opportunities are supported and the industry maintain a social licence to operate. |
| demand for fossil fuels in buildings?  | We do not support a ban on new connections, which would be detrimental to achieving the Government's renewable energy goals, including unnecessarily closing off options like hydrogen. We also note that a ban on new connections was not included in the Climate Change Commission's final advice.  |
| 73. The Government is developing options<br>for reducing fossil fuel use in industry, as<br>outlined in the Energy and industry section.<br>What are your views on the best way to<br>address the use of fossil fuels (for example,<br>coal, fossil gas and LPG) in boilers used for | We consider the best way for addressing the phase-out of fossil fuel in building is to squarely focus on the phase-in of renewable fuels by way of setting a renewable gas mandate.   |

| space and water heating in commercial buildings?  |  |
|---|--|
| 74. Do you believe that the Government's policies and proposed actions to reduce building related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts? | Please see response to question 75 below.<br>A focus on the phasing-in of renewable gases rather than an arbitrary ban on new connections for example<br>brings opportunity and choices for iwi and regional communities.  |
| 75. How could the Government ensure the<br>needs and aspirations of Māori and iwi are<br>effectively recognised, understood and<br>considered within the Building for Climate<br>Change programme?  | <ul> <li>There are substantial opportunities for the circular economy in the 'waste' feedstock needed for renewable LPG and gas, while at the same time providing regional prospects for iwi and Māori businesses.</li> <li>Iwi have repeatedly expressed a desire for devolved funding models and decision-making. A renewable gas mandate provides opportunity for iwi to determine what options are best for them in a low carbon future. A renewable gas mandate simply reduces reliance of fossil gases in line with the carbon emissions budget, without ruling specific fuel sources in or out.</li> <li>The gas and LPG industry consider iwi involvement in the transition critical to a renewable gas and LPG future and is already working with iwi and Māori businesses to ensure inclusion, that opportunities are supported, and the industry maintain a social licence to operate.</li> </ul> |



ON A MISSION TO REDUCE EMISSIONS IN NEW ZEALAND

# Response to Emissions Reduction Plan discussion document



Input to Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future

November 2021

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# Foreword – Sustainable Business Council

The Sustainable Business Council (SBC) is proud to partner with the Climate Leaders Coalition (CLC) to respond to the Government's Emissions Reduction Plan discussion document.

This first Emissions Reduction Plan is our opportunity to truly put our climate ambitions into action and ensure New Zealand gets on track to be a low-emissions country by 2050.

The time is now for a bold plan that sets out that pathway, and crucially, mobilises all New Zealanders – government, business, NGOs and civil society alike – to meet the challenge of our times.

The document provides recommendations for key policies the Government should pursue in the Emissions Reduction Plan. Critically, it also identifies the need for genuine partnership between government and business if we are to bend the emissions curve in the short amount of time we have left.

We believe our recommendations provide solutions to drive down emissions in a range of areas, including transport, agriculture, and industrial process heat, through a collaborative approach between business and government.

By working in a more aligned and effective way we can be more ambitious on freight decarbonisation, create a more effective pathway for transitioning the light vehicle fleet, see a transformational shift in our approach to agricultural R&D, and eliminate fossil fuels from industrial heat processes, while ensuring we are achieving an inclusive and orderly transition with people, at its heart.

Business and government working together to shape New Zealand's Emissions Reduction Plan between now and May next year is crucial if we are to deliver ambitious actions that meet our ambitious goals.

This also requires cross-party support on the emissions budgets, just as we saw for the Zero Carbon Act. A clear and enduring pathway, agreed across parliament, will give business the certainty they need to make investment decisions that are consistent with a low-emissions future, as well as ensuring a pathway that is equitable for all New Zealanders.

We are ready to work alongside government to help develop the next iteration of the Emissions Reduction Plan. We are confident that by working together in a truly meaningful way, we can bend the emissions curve over the next decade and deliver on the legislated targets that we are all committed to.



Karen Silk Chair Sustainable Business Council



Mike Burrell Executive Director Sustainable Business Council

# **Foreword – Climate Leaders Coalition**

Climate Leaders Coalition (CLC) companies represent over one third of New Zealand's GDP and nearly 60 percent of our gross emissions.

Our signatories recognise climate change as the defining challenge of our time. Achieving a world limited to 2°C of warming, let alone 1.5°C, is going to require a global economic transformation on an unprecedented scale. CLC is responding to climate change as the crisis that it is, and we are now asking Government to do the same.

Through CEO leadership on climate action, CLC is committed to giving confidence to stakeholders that climate change matters to business. We are demonstrating that business can and should take a leadership role and are collectively taking action to build irreversible momentum in New Zealand towards a low-emissions and climate resilient future.

The CLC was convened in 2018 and played a key role in brokering bipartisan support for the Zero Carbon Bill. This landmark piece of legislation has provided the framework for New Zealand to mount a meaningful response to the greatest challenge of our generation.

We are at a critical moment as a nation, a moment that requires decisive, urgent action, at a scale that will meet the challenging transition task ahead.

We are stepping up to play our part. CLC's recently released *Third Anniversary Snapshot* report showed that our signatories have committed to invest \$9.5 billion to reduce emissions from their business operations and \$750 million to develop products or services to reduce end-user emissions over the next five years.

In turn, what we need right now from the Government is clarity, confidence, and certainty on the path forward so signatories can continue to make investment decisions that will enable our transition to a low-emissions and climate-resilient future.

Now is the time to harness our bold ambition and turn it into bold action. Now is the time to play a defining role in designing a pathway for a transition that is equitable and fair for all.

CLC is showing that business is stepping up to the plate and playing our part. We call on the Government to join us by delivering an Emissions Reduction Plan that is built on genuine, meaningful partnerships for the benefit of all of New Zealand.



Mike Bennetts Convenor Climate Leaders Coalition

# **Executive Summary**

- 1. The recent COP26 highlighted the gap between climate ambition and action. The Emissions Reduction Plan (ERP) is New Zealand's one-in-a-generation opportunity to put the inaction of the past behind us and get serious about rapidly reducing New Zealand's extremely high per capita emissions.
- 2. This document represents the combined view of SBC and CLC's 150 member companies on the ERP discussion document, *Te hau mārohi ki anamata* | *Transitioning to a low-emissions and climate-resilient future.*
- 3. What is clear is that the task of transitioning to a low-emissions economy is enormous and there is a lot of work to be done. Proposals in the ERP discussion document will not achieve the Climate Change Commission's (CCC) recommended emissions budgets. Our members are ready to work alongside government to meet this challenge. They call for bold action to start now rather than waiting for the perfect plan. The ERP must reflect that urgency.
- 4. The task is urgent, but the response must be enduring. Emissions budgets agreed across Parliament will give business a clear signal that the future is zero carbon. The first emissions budget period is almost upon us, so we urge prioritisation of immediate action using available technologies to reduce emissions.
- 5. This is an all-of-government, all-of economy effort that must be resourced effectively. Just as the private sector is recalibrating itself to rise to this moment, so too we call on Government to organise and respond to climate change as the crisis it is.
- 6. A genuine partnership between government and business will be critical to ensuring we can bend the emissions curve in the short amount of time we have left. SBC and CLC have shown that collaboration works: our members are working together to develop and deliver solutions to drive down emissions in a range of areas, including transport, agriculture, and industrial process heat.
- 7. Building on that work, we have focussed this document on concrete proposals that will enable meaningful emissions reductions and an inclusive, orderly and enduring transition, and which are readily translated into policy.
- 8. The three key sector actions are as follows:
  - Given the role of transport in New Zealand's emissions profile, we recommend adoption of clear and specific targets and timeframes to **decarbonise the light fleet and heavy freight**.
  - We also highlight the role of the energy sector, where on \$/tCO2e basis, the most cost effective and time efficient change that we can make is in accelerating **process heat** conversions.
  - We believe a transformative scale-up in public and private investment in research and development in **agriculture** will unlock solutions to New Zealand's largest emissions challenge biogenic methane.
- 9. These efforts will all be supported through establishment of a thriving **bioeconomy and circular economy** that displaces fossil fuel-derived production materials and energy sources.

- 10. We also make recommendations that will enable this transition:
  - **Research and development** into measures to reduce emissions and facilitate the transition should be substantially increased and funded through ETS proceeds.
  - To support the transition those policies will bring about, we recommend a meaningful **collaboration between business and government**, including a Climate Advisory Group to advise the Climate Change Response Ministers Group.
  - To achieve an effective government response, we recommend the establishment of **a unit** within the Department of Prime Minister and Cabinet to oversee the interdepartmental climate change effort.
  - The Equitable Transitions Strategy must be delivered by December 2023 in partnership with business and other stakeholders.
- 11. These and our other key recommendations are set out in the table on page 7. These recommendations represent those we believe to have most potential to drive down emissions and/or to contribute to a smooth and enduring transition. We have set out the abatement potential of our key mitigation recommendations in the body of the document.
- 12. Our full list of recommendations can be found in the Appendix on page <u>56</u>.
- 13. Our members are already taking bold and urgent action to ensure an equitable and enduring transition for all of New Zealand. They are ready to work in lockstep with Government to help develop the next iteration of the ERP and implement a plan that meets the Climate Change Commission's recommended emissions budgets and bends New Zealand's emissions curve.

# Key recommendations

The following table sets out our key recommendations. Our **full list of recommendations** can be found in the Appendix on page 56.

| Sector  |   | Recommendation  | Page <sup>1</sup> |
|---|---|---|-------------------|
| TRANSPORT   | 1                                       | Structure an ICE phase out taking into account the range of factors that will contribute to EV uptake (including supply, charging infrastructure, and incentives), as well as policies restricting ICE import or manufacture in New Zealand's major trading partners.   | 20                |
|   | 2                                       | Adopt the initiatives recommended in the SBC Low Carbon Freight<br>Pathway to keep a 50% reduction in emissions by 2030 and net zero for<br>the sector by 2050 within reach.  | 14                |
|   | 3                                       | Commission a detailed feasibility study that assesses viable pathways for a local sustainable aviation fuel (SAF) industry.   | 14                |
| ENERGY – INCL.<br>PROCESS HEAT  | 4                                       | Develop a bioeconomy in New Zealand, including a roadmap for biomass<br>supply chains and a programme to supply the North Island gas network<br>with renewable gases.   | 51                |
|   | 5                                       | Develop complementary measures to the Government Investment in<br>Decarbonising Industry (GIDI) fund that support a wider range of<br>companies to decarbonise, including: a bespoke solution for process heat<br>conversions amongst the largest users; a smaller fund for SME process<br>heat users; and de-risking long-term fuel costs where appropriate. | 20                |
|   | 6                                       | Prohibit the development of new fossil fuel consuming process heat plants.  | 20                |
|   | 7                                       | Adopt a 50 per cent by 2035 renewable energy target of 50   | 22                |
| AGRICULTURE   | 8                                       | Create an accelerated pathway for the development and adoption of agricultural biogenic methane reduction technologies through a step-<br>change in public and private investment and international partnerships.<br>Targeting a much more ambitious reduction than -24 % by 2050.  | 30                |
| 9         Expand the Warmer Kiwi Hor           BUILDING AND<br>CONSTRUCTION         10         Mandate NABERSNZ ratings<br>retail buildings by June 2023.<br>buildings. | Expand the Warmer Kiwi Homes Programme. | 26  |                   |
|   | 10                                      | Mandate NABERSNZ ratings for all office buildings, hospitals, hotels, and retail buildings by June 2023. Provide support for NABERS ratings for 500 buildings.  | 26                |
|   | 11                                      | Establish a unit within the Department of Prime Minister and Cabinet to oversee the interdepartmental climate change response.  | 44                |
| ALIGNING<br>SYSTEMS &<br>TOOLS  | 12                                      | Establish a business Climate Advisory Group to advise the Climate Change<br>Response Ministers Group.   | 38                |
|   | 13                                      | Complete the Equitable Transitions Strategy by the end of 2023 in partnership with business and other stakeholders.   | 40                |
|   | 14                                      | Recycle a subset of ETS proceeds into research and innovation targeted specifically at emissions reductions and achieving an equitable transition.  | 48                |

<sup>&</sup>lt;sup>1</sup> Page reference within this document for more detail on each proposal.

## 1. Introduction

We welcome the opportunity to comment on the Emissions Reduction Plan discussion document, *Te hau mārohi ki anamata* | *Transitioning to a low-emissions and climate-resilient future*. This report draws on our previous publications:

- Briefing to Incoming Government on Climate Action Priorities from October 2020 (2020 report, available here);
- Submission to the Climate Change Commission on 2021 Draft Advice for Consultation March 2021 (CCC submission, available <u>here</u>).

We recognise the work of consulting firms Sapere and DETA that supported the development of the 2020 report, our CCC submission, and this document. This document focuses on the consultation questions in *Te hau mārohi ki anamata* that are relevant to our members' interests as outlined in the CCC submission.

This submission follows the following structure:

- Executive summary.
- Key recommendations table, including expected emissions savings and budget (\$) implications of each recommendation.
- Body text that responds to the questions asked by the discussion document. We have diverged from the structure of the discussion document to discuss transitioning key sectors first, as these areas have greatest potential to achieve additional emissions reductions. We have made clear in the headings to each section which questions in the discussion document are being addressed.
- Appendix with all recommendations in table form.

Throughout the document we have:

- Showcased member efforts to accelerate the transition to a zerocarbon future in which people and nature thrive using sidebars like the one to the right.
- Identified opportunities for business/government collaboration using boxes like the one below.

Business/government collaboration opportunity

 Interlinkages between cross-cutting and sectoral recommendations are identified using in-text shading.

#### CASE STUDY

Collaboration case studies between SBC/CLC members are showcased using sidebars like this.

### **1.2 Principles that guide our engagement**

As with our CCC submission, we have formulated this input based on the overarching pursuit of a New Zealand with:

- i. A society that is fair, inclusive, and diverse.
- ii. An economy that is:
  - open, recognising Aotearoa's role as a trading nation.
  - globally connected, virtually and physically.
  - supported by market regulation that is incentive focused, intervention cautious.
- iii. A climate change response commensurate with the urgent and rapid action needed to keep 1.5°C within reach, comprising:
  - science-based mitigation with effective measuring and reporting of emissions.
  - adaptation efforts that are technology-based, risk- and future-focused.
  - a just transition that is fair, equitable, and inclusive for all New Zealanders.

We have also considered the following specific principles in preparing this submission:

- i. We support the domestic emissions reduction targets and purpose of the Climate Change Response Act 2002 (the Act) to contribute to the global efforts under the Paris Agreement to limit warming to 1.5 degrees above pre-industrial levels.
- ii. We understand and support the focus on gross emissions reductions. We also agree that forestry offsets should not be the only mechanism relied on and that offshore mitigation should not be used to meet New Zealand's first three domestic emissions budgets other than in circumstances prescribed in the Act.
- iii. We want to work in partnership with government to achieve the emissions budgets and by helping to shape and deliver the Plan.
- iv. The Emissions Trading Scheme (ETS) should continue to be reformed to best fulfil its central role in pushing choices towards low-emissions alternatives. Complementary measures should be pursued alongside the ETS where there is a clear rationale for doing so, e.g. to address market distortions or failures that can make the emissions price less effective.
- v. Non-price policies should focus on outcomes and promote efficiency rather than being specific regulation that disincentivises innovation.
- vi. All parts of society will benefit from education and awareness raising on the imperative and the case for changing behaviours beyond ETS signals and justified non-price policies.
- vii. This response is focussed on mitigation, focussing on ERP1. Adaptation, as a further pillar of our climate change response, will be the focus of future engagement including on the *National Adaptation Plan*.

In this document, we have focussed on concrete measures to help close the gap between the existing and proposed policies and actions in the discussion document and the emissions budgets proposed by the CCC, as well as enabling measures to help ensure a fair, inclusive and orderly transition.

Responses to the specific questions set out in the discussion document follows.

## 2. Transitioning key sectors

### 2.1 Transport (questions 52-57)

Headline recommendations:

- Reducing travel by light vehicles: Develop a national public transport network and articulate a clear, systems-level approach to our future mobility.
- Increasing the number of zero-emissions vehicles and a time limit on ICE vehicles: Structure an ICE phase out taking into account the range of factors that will contribute to EV uptake (including supply, charging infrastructure, and incentives), as well as policies restricting ICE import or manufacture in New Zealand's major trading partners.
- Freight transport: Adopt the initiatives recommended in the SBC Low Carbon Freight Pathway to keep a 50% reduction in emissions by 2030 and net zero for the sector by 2050 within reach.

Abatement potential: 1,919 kT CO2e/yr by 2030 rising to 1,439 by 2035.

# 2.1.1 Target and actions to reduce travel by light vehicles (question 52)

The target of reducing VKT by cars and light vehicles by 20% by 2035

We agree with this target, on the assumption that it applies to the entire light-vehicle fleet, not just ICE light vehicles. We **recommend** Government clarify if this target is absolute or per capita.

#### National public transport network

We **support** the development of a national public transport network to reduce travel by private vehicles and to increase walking, cycling, low-emissions public and shared transport. We **recommend** Government articulate a clear, systems-level approach to a strategy for our future mobility.

Specifically, we **recommend** that the individual policies floated in the ERP discussion document be considered in a more holistic way to ensure that linkages are identified and cross-system barriers, large and small can be tackled. This is particularly important recognising that the scale of the required investment is significant and that there are long lead times for infrastructure projects.

We also **recommend** that the development of the network strategy be accelerated. The language in the ERP discussion document does not reflect the urgency with which this issue needs to be addressed, stating that in the focus of the first budget would be to develop "principles for planning and funding and planning" to enable the development of the network. We need to be moving quickly from principals and planning to action if we are to meet New Zealand's 2030 targets.

As part of the network strategy, we strongly **recommend** investigating the potential for public transport, walking and cycling in rural and provincial areas, and we would like to see more urgency placed on this action. Careful consideration is required to ensure an equitable transition and that the impacts of the transition are not unduly borne by rural communities (see also section 3.3 - equitable transitions). Thought should also be given to improving the public transport links nationally, ie, between cities. As part of this, the

right mix of design responsibility and accountability will need to be considered as between central and local government. We **recommend** that central Government articulate high-level principles and design for the network, with detailed implementation and accountability to sit with local and regional councils.

We also **recommend** the scope of the network strategy consider:

- Adaptation requirements. Some infrastructure links might become unusable due to climate change.
- An infrastructure plan, with clear timelines over which lower-carbon and affordable transport options are introduced to enable businesses to plan for the transition, especially where delivery times are important.
- Mode-shift plans for inter-regional travel. Currently, the discussion document refers to the implementation of mode-shift plan in urban areas. We **recommend** that inter-regional mode-shift opportunities should also be considered in the first budget.

We **support** an integrated land-use, urban development and transport planning and investments to reduce transport emissions. We are encouraged to see proposals to include transport emissions impact assessments for urban development, and, through the reform of the Resource Management Act, consider integrating climate issues into how we plan for and build towns, cities and infrastructure. (See also section 4.4 – planning.)

Lastly, development of a national transport network must be informed by drivers of behavioural change, recognising that the uptake of lower-emissions modes of transport will be faced with resistance from old habits and anxiety around the use of new technologies. We are therefore encouraged to see the ERP include an action on investing for a better understanding of travel accessibility, preferences and behaviour. We strongly **support** this action.

#### Transport pricing system

We generally **support** improving how transport choices are priced, so that costs associated with vehicle use are internalised (e.g., congestion / parking charge) so long as this funding is then used to expand New Zealand's public transport network to provide people with low carbon transport options. By providing a more direct pricing signal of the real costs of mobility choices, such a transport pricing system would create stronger incentives to support low-carbon user choices.

#### Congestion charge

A well-designed congestion charge would encourage desired behaviours, fewer cars on the road, more people per car, reduce transport-related emissions and bring the cost of EVs down. It would also provide a mechanism for allowing investment into public transport infrastructure, innovation into cleaner fuels, and improvements to existing assets. This would require a dramatic increase in public transport infrastructure.

We **recommend** Government provide clarity around the potential impacts of a congestion charge on transport modes that do not have alternative routes, e.g. the impact of the proposed Auckland congestion charge on heavy road transport. The SBC Low Carbon Freight Group has committed to ambitious decarbonisation targets and is already taking real action to reduce its carbon footprint. We **recommend** that the design of a congestion charge acknowledges the de-carbonisation effort being undertaking by NZ's heavy freight industry and consider exemptions from such charging over transport corridors for which alternative routes are not feasible.

#### Future-proofing road infrastructure funding

As ICE vehicles start exiting the fleet, new sources of funding for capital investments in road infrastructure will need to be secured given the current dependence on payments from fossil-fuelled vehicle use (e.g., Road User Charge (RUC), fuel excise tax). We **recommend** that an explicit consideration be given to how the road infrastructure funding source can be future-proofed. We **recommend** as few exemptions as possible for the system to operate efficiently and deliver the desired outcomes, with exploration of alternative interventions to drive uptake of low-emissions vehicles and fuels. We **recommend** that Government integrate this into the *Future of the Revenue System* project.

### 2.1.2 Target and actions to increase the number of zeroemissions vehicles (question 53)

#### The target of increasing zero-emissions vehicles to 30% of the light fleet by 2035

We **support** this target in principle as being consistent with the CCC's advice in this area. We **recommend** an analysis be published of how this target could impact different parts of the society, especially when interacting with other policy instruments that affect transport choices (e.g. a congestion charge). We reiterate our **recommendation** that the long-term focus should remain reducing the emissions footprint of the fleet through a mix of policy interventions that avoid marginalising parts of the society.

#### Full utilisation of Clean Car Sector Leadership Group

Low-emissions vehicles, including electric vehicles (EVs – which for simplicity we use in this submission to refer to both battery electric and hybrid vehicles), will be an important part of the broad range of solutions that will be required in decarbonising Aotearoa's transport sector. SBC has welcomed the chance to engage in the Clean Car Sector Leadership Group. We **recommend** the work of that Group should be accelerated and expanded to realise its full potential to develop practical solutions to overcome the key barriers to uptake of low-emissions vehicles in New Zealand. The group should focus its efforts on, and be resourced to develop, practical solutions to the timing and structure of an ICE phase out; charging infrastructure (see below); and equity – access and affordability.

If optimized and resourced to deliver practical solutions that are developed in lockstep with to the policy process, the Clean Car Sector Leadership Group could become a key model for business/government collaboration on decarbonization. Beyond that, members of the Group and their constituent companies should also be encouraged to collaborate to find solutions to other challenges, e.g. exploring options to minimise the risk of BEV supply (e.g. via bulk procurement).

#### Charging infrastructure

The ERP discussion document notes that EECA, MoT, MBIE and Waka Kotahi are drawing up a national infrastructure plan, aiming to serve 30 per cent of the light vehicle fleet by 2035. We support the acceleration of this work as a matter of priority:

i. The infrastructure needs to keep pace with the significant switch from ICE to EV. There is urgency to such a plan given the decisions that are already being made with respect to urban planning. We **recommend** that the scoping of a national EV infrastructure plan be accelerated with a view to
commencing implementation by early 2023 at the latest. We support the work being done through EECA's draft EV charging roadmap.

- ii. As part of the plan, we recommend expanded support for co-investment for EV charging infrastructure to incentivise an accelerated rollout of infrastructure, as introduced through EECA's Low Emission Transport Fund. We particularly support work aimed at promoting the establishment of necessary infrastructure in rural areas.
- iii. We expect smart EV charging to play a critical role in electrifying transport affordably in the future, not just for EV owners but for all users of the electricity system. We **recommend** that the ERP considers the value of smart EV charging and smart EV integration within the wider electricity system, and not restricted to heavy truck use only. We would like the ERP to explicitly reflect CCC's advice for multiple points of access and fast charging.
- iv. As with the broader energy sector transition, failure to implement demand side solutions, and distributed energy resources will increase electricity prices and exacerbate inequality. Charging infrastructure must be therefore developed and rolled out with an eye to avoiding inequity. (See also section 3.3 equitable transition.)
- v. The ERP action on EV infrastructure should also consider the role and applicability of vehicle to grid technology, load management, and how this technology can be utilised in partnership with smart EV charging systems to deliver the energy and power required to charge an EV fleet across the network. This should also consider the role of residential charging to manage peak loading, given the large proportion of light EV charging that occurs at home.

There is an ongoing need for government and private sector to work closely together to ensure that charging infrastructure is developed and deployed in a way that coheres with the broader transport transition. The electricity sector (and wider energy sector) needs to be involved in designing and delivering the transport sector's transition. The Government's role should be focussed on providing certainty to the private sector and ensuring that this emerging market develops in such a way that it may eventually be self-sustaining. We see this as a key opportunity for business/government collaboration to develop a systems-level approach. This process needs to involve the transport, energy and infrastructure sectors and will require coordination at both a strategic level and at an operational level.

#### Role of business in accelerating fleet transformation

Corporate fleets will play a major role in the move to electrifying light vehicles. Many SBC/CLC members already have targets to transition their corporate fleets. We **recommend** that Government includes a specific action to consider the possible short-term impacts on businesses as they transform their fleet to lower-carbon assets. In addition to cooperation and information sharing between businesses on corporate fleet conversion, government has a role to play in removing current barriers (some of which are discussed below) to help smooth the pathway to electrification of corporate fleets.

The ERP discussion document recommends investigation of tax incentives. We **support** reviewing the tax system to ensure low-emissions options are not disadvantaged, however we **recommend** that this action be accelerated with clear outcomes within the first budget. Removing current barriers will help smooth the pathway to electrification of corporate fleets. That includes reducing, removing or changing the

methodology for calculating the fringe benefit tax for the corporate battery BEV fleet and employee EV charging.

There are other impacts on businesses as well. For example, current WorkSafe guidelines requiring employer owned EVs to be charged in a garage. This is a major barrier for some of our members in terms of which employees can be eligible for an EV. We **recommend** that this be changed or modified to make it more practical and incentivise employer EV uptake, and that this work be undertaken as a matter of urgency.

Lastly, we **recommend** Government consider extending the Clean Car Discount threshold to cover light commercial vans, in order to reduce the total cost of ownership of these vehicles, and thereby support BEV uptake across the commercial fleet.

#### Vehicle scrappage scheme

We are pleased to see the introduction of a vehicle scrappage scheme during the first carbon budget. We recognise that there are significant social issues to address in exiting older vehicles from the fleet, and that the cost of scrappage and of upgrading to a newer vehicle will be prohibitive for many low-income households. Therefore, we welcome financial support for the installation of (smart) home EV charging, and financial incentives to opt for low-emissions alternatives (e.g. bikes) instead of vehicle replacement. In addition to these, we also **recommend** Government consider if targeted cash incentives could be provided for scrappage, or for low-income households to trade older vehicles and purchase more fuel-efficient cars.

In addition to a scrappage scheme, we **recommend** that Government considers measures to reduce the amount of vehicles that may need to be scrapped, for example investigation of retrofit of ICE engines or viability of drop in synthetics and biofuels where technically and commercially viable technologies for converting engines of fossil fuel cars to EV engines and subsidise and scale them up.

#### Complementary measures

We recommend that Government considers complementary measures aimed at getting older vehicles off the road. This should include picking up on the work of the Battery Industry Group to explore the infrastructure required for recycling EV batteries at the end of their life within Aotearoa, with a view to a scheme being in place within the next two years.

### 2.1.3 Targets and actions for freight transport (questions 54-55)

## The targets of reducing emissions from freight transport by 25% by 2035, and reducing emissions intensity of transport fuels by 15% by 2035

According to the discussion document, the ERP will aim to reduce emissions from freight transport by 25 percent by 2035. The SBC's Low Carbon Freight Pathway, reflected in the CCC's final advice, has shown that we can be much more ambitious, with a goal of halving emissions by 2030 and net zero for the sector by 2050. We **recommend** Government investigate whether a more ambitious target could be adopted by implementing the measures recommended in the SBC Low Carbon Freight Pathway as set out in this section.

The Low Carbon Freight Pathway shows a greater emissions reduction goal for freight can be set, but work needs to start now. We think leaving the actions to be developed in the second and third budget is out of pace with the urgency for de-carbonising heavy freight. The SBC Low Carbon Freight Group is already taking actions to reduce emissions. Some fuel switching options (e.g. biofuels or electrification) will require investment decisions to be made in the following years, so we urge **Government** to accelerate this action.

This needs to be underpinned by robust policy and action by the sector to achieve the targets. A partnership with business is essential to address the need and plans for long-term infrastructure investments to support the decarbonisation of heavy freight. Furthermore, a concerted, coordinated approach at the central government level is required rather than a piecemeal local or regional plan.

SBC and the Low Carbon Freight Group look forward to engaging on the development of the Freight and Supply Chain Strategy as a matter of priority. We note that the Low Carbon Freight Pathway modelling excludes aviation emissions, as does the modelling in the ERP discussion document Transport section. Aviation will require specific targets and pathways that reflect the dual operation of aviation carrying both people and products as well as the lack of readily available decarbonisation technologies in first two emissions budget periods.

Comments on the specific areas raised in the discussion document are set out below.

#### Supporting uptake of low-carbon fuels

The ERP discussion document proposes actions for de-carbonising trucks, including fuel-efficiency standards, more funding to purchase low-emissions trucks, investment in green fuel infrastructure, and green freight procurement. Although we agree with the direction set out by these actions, we **recommend** for a more targeted approach in identifying and removing barriers to the uptake of low-carbon fuels, not just for trucks but also for other modes of transport.

A first step would be to create the necessary settings for innovation in this space, so that the full potential of emerging technologies can be harnessed. In this respect, it will be critical for government and industry to work together to ensure that we are building skills and innovation capabilities within Aotearoa, and that the rollout of supporting infrastructure to enable innovation can continue at pace. This public-private collaboration could be shaped to follow MBIE's mission-led approach to innovation.

The SBC Heavy Freight Group describes the freight de-carbonisation pathway as made up of three horizons, with the first one being fleet optimisation and modal shift, the second – use of advanced biofuels, and the third – electrification (hydrogen or battery).<sup>2</sup>

Given that aviation and heavy freight are the hardest parts of the sector to abate, and biofuels and green hydrogen offer great decarbonisation potential for both but will be produced in limited volumes (particularly in the next decade), policy safeguards and incentives are required to ensure that limited resources are directed to the parts of the sector where they are most needed.

We **recommend** that Government:

- Invests in gathering the evidence on the expected demand for biofuels and hydrogen through to 2050 from different sectors, and on the demand for electricity required to support the domestic production of green hydrogen. As mentioned previously, the electricity sector needs to be involved in designing and following through on the transport sector's transition.
- Provides targeted support and an enabling regulatory framework to incentivise innovation and commercial production of:
  - Domestic biofuel, including sustainable aviation and shipping fuels.

<sup>&</sup>lt;sup>2</sup> https://www.sbc.org.nz/media/sbc/our-word/low-carbon-freight-pathway-documents/Low-carbon-freight-pathway-report.pdf

- Green hydrogen as an alternative to decarbonise aviation and heavy transport (to complement and build on existing work done in this area, including through Ara Ake; see also discussion of the role of hydrogen in section 4.3 below).

#### Biofuels

We **support** the introduction of a biofuel mandate, and consideration to being given to supporting domestic production of biofuels. However, due to limited feedstock supply, we **recommend** that the mandate should be first targeted to the parts of the transport sector that are hardest to de-carbonise, i.e. heavy freight and aviation.

We also **recommend** that the domestic production of biofuels is placed within a broader bioeconomy strategy for Aotearoa. The bioeconomy and biofuels strategies must be integrated, recognising other uses of biomass feedstock in the economy, and the trade-offs amongst supply-chain investment decisions that will need to be made. The issue of biofuel supply is particularly relevant for aviation, where alternative options to decarbonise are not available (see aviation below).

As well as assessing the role of biofuels within a nationwide bioeconomy context, we **recommend** that complementary analysis also be undertaken with regards to the end-to-end supply chain of biofuels, particularly if these are domestically produced. For example, this would include analysis of opportunities and barriers upstream (e.g. biomass feedstock, hydrogen and CO2 requirements), assessment of compatibility with current liquid-fuel distribution infrastructure or new requirements, interfaces with the electricity system.

#### Freight and Supply Chain Strategy

SBC and CLC **support** the development of a National Freight and Supply Chain Strategy that addresses the need and plans for longterm infrastructure investments to support the decarbonisation of heavy freight. A concerted, coordinated approach at the central government level is required rather than a piecemeal local or regional plan. We see that much of the detail of freight sector decarbonisation will be contained in that Strategy. We look forward to continuing to collaborate with Government on its development and make some initial comments below.

MoT's *Hīkina* discussion document set out a number of potential emissions reduction measures that align with the Low Carbon Freight Pathway, as set out below. We **recommend** that these measures be explicitly considered in developing the Strategy.

• Optimising freight routes, logistic nodes, equipment and vehicles: the SBC Low Carbon Freight Group is already

#### CASE STUDY: SBC'S LOW CARBON FREIGHT PATHWAY

SBC's Freight Group has set out an ambitious but achievable 30year pathway to progressively decarbonise New Zealand's freight system.

The Low Carbon Freight Pathway report brought together industry leaders from nine companies: Countdown, Fonterra, Lyttelton Port Company, New Zealand Post, Ports of Auckland, Swire Shipping, The Warehouse Group, MOVE Logistics (formerly TIL Logistics Group) and Toll.

This collaboration is about developing industry leadership and harnessing a collaborative approach to help the wider freight sector get to net zero using a planned and staged 30-year decarbonisation programme.

The Pathway models horizons for decarbonising freight based on **reducing** emissions by optimising the use of existing vehicles, **replacing** fossil fuels with biofuels, and ultimately **eliminating** ICE engines.

Work now continues within the group to implement business-to-business solutions on the Pathway. planning on doing this through exploring collaborations aimed at optimising freight routes.

- Examine opportunities for the collection and better use of data to improve efficiencies in the freight system. Subject to competition law considerations, SBC Low Carbon Freight Group could play a role in the effective data gathering and use of data to improve efficiencies in the freight system. We would welcome the chance to discuss this matter further.
- Consider encouraging/supporting voluntary business collaborations to reduce emissions in logistics the Low Carbon Freight Group is already doing this and seeking to promote more cross-industry collaboration through expanding the Pathway membership.

As well as the above, we recommend that the Strategy:

- Explores consumer behaviour that promotes modal shift, this being one of the Low Carbon Freight Group's implementation channels. We look forward to engaging on this in more detail through the Freight and Supply Chain Strategy.
- Specifically mention the roles of biodiesel, sustainable aviation fuel, green hydrogen, and BEVs in the freight sector transition. As noted above, the Low Carbon Freight Pathway showed that alternative fuels and electrification need to, and can feasibly, play a major role in freight sector decarbonisation.
- Be underpinned by evidence on the demand for mode shift to rail or coastal shipping, and the capacity available to meet that demand.
- Clearly articulate the vision on how different transport modes can integrate across different routes, identifying barriers and highlighting opportunities.

#### Aviation

#### Low-carbon fuels

Decarbonising aviation is critical to the future prosperity of primary produce exports, the tourism sector, and maintaining important social connections. Aviation plays an important role in connecting people and delivering Aotearoa's high-value and perishable export products to the world, for which alternative transport modes are not often feasible. Given the increased global focus and customer awareness of emissions embedded in products consumed, decarbonising aviation will provide broader benefits to New Zealand, its economy and its exports, noting New Zealand's reliance on air travel to connect it and its products to the world.

Overall, we **support** the report's recommended actions to:

i. Investigate Sustainable Aviation Fuel (SAF) feasibility. This should include a detailed feasibility study to help confirm high level production cost estimates, confirm feedstock supply, determine necessary policy and investment settings, and quantify the greater benefits to the regions of standing up a SAF industry.

SAF is critical to aviation decarbonisation. For long haul, it is the only current option. Some of our members, including Air New Zealand and Z Energy, are committed to working with Government and others in the private sector to make SAF a reality in Aotearoa over the next few years.

- Support the establishment of an Aviation Decarbonisation Advisory Group. However, we recommend this group be a public-private group, like those established in the UK, US and Norway. Public-private membership would better facilitate the coordination and development of the policies and investment settings needed to support SAF, as well as other areas of aviation decarbonisation; and
- iii. Consider policies and regulations for zero-emissions aircraft. This should include assessing regulatory settings related to aviation, including airports and energy systems, to ascertain whether the system is fit for purpose for the adoption of aviation decarbonisation technologies. This

assessment should be done in collaboration with the industry. We note that Air New Zealand has already signed an MoU with Airbus, under which Air NZ will investigate the impact hydrogen aircraft may have on its network, operations and infrastructure.

Current technological challenges should not stop us from planning and working towards a future with electric, hybrid and/or hydrogen fuel cell powered short haul aviation in the coming decades. New Zealand has a unique opportunity to be a world leader in the development and adoption of zero emissions aircraft, given the country's commitment to renewable energy which can be used to generate green hydrogen and our highly connected regional air network. Zero emissions aircraft will require scalable access to large volumes of green hydrogen, major changes to airport infrastructure and operations, manufacturing, supply chains, maintenance infrastructure and operations, airline capital plans and operations, and training. To realise the future economic and environmental returns of zero-emission electric aircraft, now is the time to start planning, research, and investment in partnership with the aviation sector.

As noted above, we generally **support** the introduction of a biofuels mandate applying to SAF. However, the current proposal for a biofuels mandate for Aotearoa would not facilitate SAF supply in Aotearoa. A SAF-specific mandate applying to <u>all</u> fuels (including fuel uplifted for use on international flights) is required. We **recommend** the SAF mandate to start at 2.5% in 2025, ratcheting to a 50% blend mandate in 2050.<sup>3</sup>

Any mandate must be complemented by wider policy support and investment. A mandate in isolation will provide limited support. We **recommend** investigation of a specific biofuel mandate for SAF and government support for domestic production as two of many possible policies that could be used to close the gap between SAF and fossil fuels. Other possible supporting policies referred to in the SAF roadmap<sup>4</sup> include feedstock prioritisation, NZ ETS exemptions, and financing support. We welcome further discussion on what the best mix of policies is for making SAF a reality in Aotearoa.

In addition to the actions proposed for the first budget, we also **recommend** the following to facilitate aviation decarbonisation:

- Identify and prepare for the infrastructure and energy requirements of zero emissions aircraft. To operate these planes in the third budget period as we plan, research and investment in this infrastructure needs to start now.
- Review the objectives of the air traffic management system to, after safety, optimise for carbon reduction.

#### Operational improvements

We also **recommend** exploring the scope for operational improvements at airports: developing fuel-saving flight paths (in conjunction with Airways New Zealand) and the allocation of taxiways to minimise aircraft taxi time.

#### CASE STUDY: DECARBONISING AIRPORT OPERATIONS

Auckland Airport and Christchurch Airport provide Ground Power Units and Pre-Conditioned Air at the gate which allows planes to connect to electricity mains when grounded rather than burn fuel in onboard generators, saving emissions. Over the course of a year, if one A320 aircraft swapped from burning jet fuel in their auxiliary power units, to instead using gate ground source power, this would save 730t CO2e and \$176,000 NZD per year.

<sup>&</sup>lt;sup>3</sup> See SAF Consortium 2050 Roadmap – Appendix 1 in https://p-airnz.com/cms/assets/PDFs/Airnz-sustainable-aviation-fuel-innew-zealand-may-2021.pdf

<sup>&</sup>lt;sup>4</sup> https://p-airnz.com/cms/assets/PDFs/Airnz-sustainable-aviation-fuel-in-new-zealand-may-2021.pdf

#### Rail and marine

We **support** exploring mode-shift opportunities as part of the Freight and Supply Chain Strategy, however we recommend that more analysis is undertaken to assess what a feasible path for mode shift would be over the next three carbon budgets. MoT's *Hīkina* estimated that between 15-35 per cent of the road freight task is potentially transferrable to rail and coastal shipping. The SBC Low-Carbon Freight Pathway report models 14 per cent, which is likely at the very top end of what the SBC Freight Group's report considered realistic.

Mode -shift targets must be informed by a good understanding of the capacity available on rail and coastal shipping to meet the potential demand for mode shift. This analysis is currently missing and will require an investigation of the barriers facing the shift (including service pricing and availability), and how these barriers are expected to be removed over the next 5-10 years. We **recommend** that the ERP includes a specific action for identifying barriers to mode-shift, which would then inform the Strategy.

We also **recommend** that the Strategy clearly articulates the investments required in rail and coastal shipping to deliver the desired mode-shift outcomes. This assessment of investments should link back to those announced in the *New Zealand Rail Plan* and for coastal shipping as part of the ERP, clearly identify the investment gap, and how this gap will be addressed.

We would welcome the chance to discuss the above in the context of the Freight and Supply Chain Strategy to ensure the freight pathway is feasible. Based on this analysis, we **recommend** that realistic mode-shift targets be considered for inclusion the ERP.

We **recommend** that the ERP also actions the Commission's advice to introduce a target/mandate for renewable fuels for ships with policy level guidance and recommendations to support the domestic production, distribution and supply for those alternative fuels.

Finally, we **recommend** closer examination of the role of shipping, including international shipping, in reducing New Zealand's transport emissions, as part of the ERP. Domestic and international shipping could be a significant source of demand for biofuels and hydrogen. Therefore, it makes sense to include these sources of potential demand be factored into New Zealand's strategies for these future fuel sources

#### Complementary measures

There is also an opportunity for the domestic refurbishment of high-emitting trucks. New trucks enter Aotearoa as a cab and chassis and have their freight bodies fitted locally. This has created a local expertise in truck assembly that could be used to convert diesel trucks. This would also help address low-carbon vehicle supply challenges. We are aware of the barriers to such refurbishment on a larger scale, particularly the reluctance of truck manufacturers to provide warranties, and therefore support the focus to be on newer existing diesel trucks that do not have deteriorated running gear. We **recommend** that the opportunity for domestic refurbishment of high-emitting trucks is explicitly considered in the ERP.

We **recommend** Government reviews restrictions/requirements (e.g., length restrictions) on the type of heavy vehicles that can be bought into New Zealand. These restrictions are a barrier to low-carbon heavy vehicle uptake. A change to allow longer vehicles could incentivise low-emissions heavy-freight vehicles into New Zealand faster.

### 2.1.4 Time limit on ICE light vehicles (question 56)

We **support** an ambitious roadmap to accelerate the transformation of the transport asset make-up. The phase out of ICE light vehicles entering, being manufactured, or assembled in New Zealand must be designed carefully to ensure it reflects the availability, affordability and safety of alternatives to ICE vehicles.

We **recommend** the policy is structured taking into account the range of factors that will contribute to EV uptake in Aotearoa (including supply, charging infrastructure, and incentives), as well as policies restricting ICE import or manufacture in New Zealand's major trading partners. The Clean Car Sector Leadership Group would be a useful forum to understand the practical and commercial reality in these areas. We point to our partner organisation, Drive Electric's, response on this issue which highlights useful analysis for the design of an ICE ban, including tying it to the pathway of the Clean Vehicle Standards, with a specific future focus on Europe.

### 2.2 Energy and industry (questions 58-69)

#### 2.2.1 Process heat

Headline recommendation:

- Develop complementary measures to the Government Investment in Decarbonising Industry (GIDI) fund that support a wider range of companies to decarbonise: a bespoke solution for process heat conversions amongst the largest users and a smaller fund for SME process heat users.
- Establish a mechanism for government to underwrite long-term fuel costs to de-risk and incentivise investment in electrification.
- Prohibit the development of new fossil fuel consuming process heat plants.

Abatement potential: 3,170 kT CO2e/yr

We **support** acceleration of the energy industry switching to low-emissions fuels for process heat and the uptake of energy efficiency measures. We believe that on a \$/tCO2e basis, the most cost effective and time efficient change that we can make is in process heat.

We **support** the CCC's recommendation that a high NZ ETS price signal is central to delivering this, along with policies that reduce barriers related to access to capital, behaviour change, and infrastructure access. In addition, we support the phase out of coal fuelled boilers and the development of biomass supply chains. This section is closely linked to section 4.7 – bioeconomy.

We also recommend that:

- investment is extended in the decarbonising industry and enhance industrial energy efficiency support.
- all new low-medium temperature coal process heat plants are prohibited.
- a program is undertaken to identify solutions to 'green' the North Island gas network.

Process heat emissions reductions can be achieved with technology available today, and at costs significantly less than today's ETS costs. This has been proven through the first two stages of the GIDI fund, where the average government investment in these projects has been less than \$13/tCO2e over the 20-year lifetime of each project.

While these projects represent the 'low hanging fruit', at a current carbon price of \$65/eCO2e, there are many more projects that could be implemented within a relatively short timeframe. Most successful GIDI projects have incorporated both energy efficiency as well as fuel switching – having these improvements hand-in-hand will be key to deliver the decarbonisation outcomes we need.

We support continuation of GIDI and **recommend** Government provide clarity on future rounds (for example, it is not currently clear whether there is funding after GIDI round three).

One shortcoming of GIDI is that it is focused more on mid-sized users and excludes those process heat users who are large (i.e., their conversions require upwards of \$5M to support economically) or who are small, and cannot easily afford to engage experts to support the development of a project, are less able to access GIDI. We **recommend** that Government:

- directly engage with large users (e.g. top 20 in New Zealand) with a view to targeting GIDI at their transitions. The key reason for this is that the large users represent more than 40 per cent of the available capacity. Converting these users to bioenergy is not necessarily the best use of biomass fuel and will likely require a customised solution to help decarbonise. They may also make the most tangible carbon reductions across New Zealand.
- establish a second fund to assist smaller users with a less stringent criteria around engagement.

The framing of the GIDI fund is hinged largely on capital support, and while this can help many businesses across the investment hurdle, there remains concern around medium-term energy costs, and availability of fuel in a timeframe appropriate for conversion. For some businesses capital outlay is not the key barrier, but rather the uncertainty about supply and price of electricity in future prevents electrification from being an investable proposition. In these cases, government has a role to play in providing long term fuel price clarity to provide businesses with the confidence they need to decarbonise quickly. We **recommend** Government establish a mechanism to underwrite long-term fuel costs to de-risk and incentivise investment in electrification. This could be in the form of specific bridging support in the event of electricity price spikes for decarbonised businesses for a period of 10 years, to cover for periods of high energy cost and give confidence in the long-term performance of the energy market.

We have estimated the cost for these schemes by reviewing work<sup>5</sup> underway presently by EECA, Transpower, and many of the Electricity Distribution Boards across New Zealand.

#### CASE STUDY: DEVELOPING A HEAT TASKFORCE

As one of New Zealand's most promising mitigation opportunities, process heat is one of the areas many of our members are looking to tackle through collaboration.

Many of members are already changing how they power their industrial processes. DB and Sanford have moved boilers to biomass fuel as described in section 4.7 - bioeconomy. In addition, ANZCO Foods in partnership with fellow SBC and CLC member Meridian Energy has recommissioned retired electric boilers at its Canterbury site as part of an overall transition from coal to electricity will bring additional electricity usage of 14GWH and will remove 2800T of coal and 5,600MT of carbon a year at the site.

Now a group of those members are working together to scope whether business-tobusiness collaboration and knowledge-sharing can help them go further faster collectively.

<sup>&</sup>lt;sup>5</sup> https://www.eeca.govt.nz/assets/EECA-Resources/Research-papers-guides/Regional-Heat-Demand-Database-Overview.pdf

We **recommend** that Government prohibit the development of new fossil fuel consuming process heat plants.

Many of SBC/CLC member companies have made their own intentions clear about phasing out of coal heating systems and converting to electricity or biomass-fuelled options. There are numerous examples of plants for a range of low carbon technologies, including heat pumps, biomass boilers and electrode boiler options. And the economics of converting are being improved significantly as the ETS increases the local cost of carbon.

Specifically, we recommend that Government:

- Prohibit the installation of any new coal boilers for stationary process heating energy.
- Develop a transition plan in conjunction with government and industry to phase out the operation of all process heat fossil fuel boilers operating in New Zealand by 2050.

If all industry converts to a 100 per cent renewable alternative, this removes 6,390 kt CO2 (8 per cent of our national emissions). For this reason we think focusing on transitioning process heat to sustainable energy should be a top priority for government and business and should be actioned through an ambitious partnership.

#### Process heat retrofits

We have concerns around the availability of resources to undertake the level of work required to decarbonise New Zealand's industry. Meeting the CCC's 2037 recommended pathway is a substantial undertaking, given each large-scale decarbonisation project will be unique and complex across industries. Sequencing such a transition will need to take into consideration the availability of skilled experts to design and implement new systems, capacity to supply new equipment, reliability and affordability of alternative fuel options, and appropriate consenting and regulatory approvals.

We **recommend** that Government is clearer and stronger in its messaging that this is a significant area for quick, lasting, decarbonisation, and this should be a key area for current government investment.

### 2.3 Energy – electricity generation

Headline recommendation: Adopt a 50 per cent renewable energy consumption target by 2035.

Abatement potential: 8,742 in addition to the other initiatives in this document (based on CCC demonstration path).

We **support** a renewable energy target as recommended by the CCC and outlined in the ERP discussion document. We also **support** an aspirational target for renewable electricity and agree with the CCC's position which is that the last few percentage points are too expensive to pursue and that government and business would reduce emissions faster (and more affordably) if government prioritise other, more carbon-intensive emitters (transport, process heat), over investment in 100 per cent electricity generation. We **agree** with the CCC that the overall path to net zero carbon should deploy the least cost abatement options first.

#### Energy strategy

We **support** the CCC's recommendation to develop a long-term national energy strategy that provides clear objectives and a predictable pathway away from fossil fuels and towards low-emissions fuels, and the infrastructure to support delivery. We **agree** that this strategy is central to New Zealand's low carbon future. As we recommended to the CCC, we **recommend** that the framing of the strategy in the ERP provides

greater specificity about what needs to be included within the energy strategy to help government to act quickly and decisively. We **recommend** that a terms of reference of the strategy is developed and included in the final ERP.

The industrial sector (particularly process heat) and the transport sector (particularly aviation) will be large consumers of biomass and green hydrogen. This energy strategy is critical to ensuring the system is able to scale to the degree required to support New Zealand's transition to a low-emissions economy in transport and industry. We **recommend** that Government engage with future customers of large quantities of bioenergy and green hydrogen to ensure future demand scenarios are appropriate.

It is essential that the strategy outlines a process for central government to take a whole-of-system approach to energy policy, including the infrastructure requirements and especially in rural and agricultural settings. We note that the state of evolution, the possibilities, and the expectations on each of electricity, natural gas, bioenergy, hydrogen and demand-side response are different yet interrelated.

The strategy should also aim to reduce uncertainty and strike a balance which incentivises market-led innovation and achieves abatement in lower cost areas. The energy strategy should provide clarity on the role that Government intends to play in the energy sector and the targets and principles it will apply in considering any major investment in the energy sector. Government investment in the sector has the potential to chill private investments unless there is clarity early on government's intentions.

Also, account has to be taken of the compliance costs of the transformation. There has not been a great deal of reporting on and accounting for the emissions profile of commercial activities to date. It is clear that something like the proposed Energy and Emissions Reporting is needed. We **recommend** that clarity is provided on who 'owns' the energy strategy and the electricity-specific strategy, and by when the strategy will be drafted. We **recommend** that this strategy is owned by the Minister of Energy and Resources and that there is a commitment made to have this ready for public consultation in 2022

We further **recommend** that the following forms part of the long-term energy strategy:

- i. Amendments to existing policy architecture to allow an accelerated transition, including ensuring the Commerce Commission's price pathway methodology does not hold up urgent additional investment for electrification of innovation in deployment of distributed energy resources (DER) for system management.
- ii. The interplay of varying fuel types (electricity, biomass, natural gas, biogas, hydrogen) through the transition.
- iii. Assessing the role of demand side management especially in electricity and incorporating the place of energy efficiency and new technology to better manage both supply-side and demand-side energy consumption. Ensure regulation is not a barrier.
- iv. Clarifying the place of New Zealand's Energy Certificate System, and the effect of its carbon footprint on the wider electricity sector.
- v. Investigation of whether policy measures should incentivise the uptake of renewable energy technologies in New Zealand. Accommodating a distributed generation model within the existing system could potentially, if structured correctly, support management of supply and demand, increase resilience and ease the burden on energy sector capital investment.
- vi. The strategy should build on work already being done in this area, most notably The Aotearoa Circle's Energy Strategy.
- vii. The strategy should be considered through an equitable transition lens, including measures to address the 'energy trilemma' of affordability, security and sustainability. We point to the Business Energy council's New Zealand Energy Scenarios TIMES-NZ 2.0 as useful a tool to aid decision-making on future energy supply and the range of associated trade-offs.

#### Removing regulatory barriers

We **recommend** regulators remove any barriers to investments that would facilitate emissions reductions. Specifically in our submission to the CCC, we noted that the contestable wholesale and retail electricity markets are regulated by a market regulator (the Electricity Authority) while monopoly network businesses are regulated by an economic regulator (the Commerce Commission). We understand that emissions reduction objectives are national, economy-wide objectives as expressed in the Act, but those regulators have a role to play in the parts of the sector they regulate to support the purpose of the Act. They can reduce barriers to investment and behaviours that support emissions reductions.

We note that the Electricity Authority has included low-emissions energy as one of five sector ambitions in their statement of intent.<sup>6</sup> While the Authority's statutory objective, powers, and functions have remained the same since 2010, the environment in which we operate has changed. We **recommend** that the Authority follows through on this strategic intent and implement the recommendations of the Innovation and Participation Advisory Group under the Equal Access work stream.<sup>7</sup> That work identified options the Authority (and in some cases the Commission) could take to strengthen the equal access framework to further promote competition, reliability and efficiency in the provision of electricity and electricity related services, including network support services.

At present, the Commerce Commission's statement of intent does not mention the environment, decarbonisation, or greenhouse gas emissions at all.<sup>8</sup> We **recommend** the Commerce Commission actively reflect Government policy and intent on greenhouse gas emissions while upholding its statutory remit. Steps would include prioritising work and making decisions that reflect the contribution the electricity system must inevitably make to the decarbonisation agenda.

#### Adaptation of electricity regulation

We **recommend** that electricity regulation be adapted for a low-emissions future.

We note the heavy reliance on electrification in the proposed transition pathway and **recommend** that a broader view of the impacts of the institutional arrangements on the sector is given. More joined-up thinking to enable the sector to access different funding and investment mechanisms could help the electrification agenda. Specifically, the level of funding and the type of investments that can be made by regulated entities is heavily influenced by the regulatory regime.

We **recommend** that further clarity is provided on whether elements of all the existing institutional arrangements for energy are set up to encourage (and not impede) developments around the energy needs of zero emissions aircrafts (electric, hybrid, and hydrogen aircraft).

<sup>&</sup>lt;sup>6</sup> Electricity Authority Statement of Intent 1 July 2020 – 30 June 2024 See; https://www.ea.govt.nz/about-us/strategic-planningand-reporting/statement-of-intent/

<sup>&</sup>lt;sup>7</sup> Innovation and Participation Advisory Group Advice on creating equal access to electricity networks April 2019 See https://www.ea.govt.nz/development/advisory-technical-groups/ipag/final-advice/

<sup>&</sup>lt;sup>8</sup> Commerce Commission Statement of Intent Our Approach for 2020–2024. See https://comcom.govt.nz/\_data/assets/pdf\_file/0014/222305/Statement-of-Intent-20202024.PDF

#### The role of green hydrogen

Green hydrogen can be used in industrial processes or stored for use in a peaking electricity generation plant, to support green ammonia as an input into green urea and other chemical products, to make green methane (to replace natural gas), to make green methanol to replace existing uses of methanol and make green synfuels. Most of those applications lend themselves to export. The electrolysis process that makes green hydrogen from renewable electricity can be set up on the basis that it could be interrupted in dry years so the renewable electricity is diverted back into the grid. New Zealand has a high proportion of renewable electricity generation today and scope for renewable generation far in excess of our electrification needs if our offshore potential is taken into account.

We **recommend** greater emphasis on the potential role of green hydrogen as a low-carbon fuel in the ERP, in particular incentivisation of measures to encourage research and innovation to explore green hydrogen's potential given the scope above. There is significant opportunity in this area. Advancing a bioeconomy will also present the opportunity to introduce green hydrogen across a range of end uses as a supplementary and complementary fuel source. For example, the North Island natural gas network could provide gas that is a combination of natural gas, biogas, and green hydrogen with ratios that change depending on the availability of each fuel type, and any excess could be converted into liquid fuels or electricity. (See section 4.7 – bioeconomy for a more detailed recommendation in this area.)

Green hydrogen is a key part of the technology roadmap for zero emissions aircrafts and has potential as an alternative to biomass as a complementary feedstock when creating synthetic sustainable aviation fuels ("power to liquid" fuels). In addition, the bioeconomy can decarbonise heavy vehicle fleets, including construction equipment. SBC's Low Carbon Freight Pathway, for example, showed that hydrogen is a viable fuel alternative to biofuels. Furthermore, both biofuel and hydrogen offer low emissions alternatives for both international and domestic shipping. These additional sources of demand\_need to be factored into policy to future proof the necessary infrastructure where green hydrogen and biofuels are used to reduce the carbon footprint across the economy. We **recommend** this potential be more fully explored.

#### CASE STUDY: SOUTHERN GREEN HYDROGEN

Southern Green Hydrogen is a joint project by Meridian Energy and Contact Energy, to evaluate the opportunity to produce green hydrogen in Southland, New Zealand. The plant has the potential to earn hundreds of millions in export revenue and help decarbonise economies both here and overseas, according to a recent McKinsey & Co report commissioned by Meridian and Contact. The report estimates global demand could increase more than sevenfold to 553 million tonnes by 2050. Southland has the potential to be at the forefront of this growth opportunity. There is significant interest in the project, with more than 80 international and domestic businesses registering their interest.

### 2.4 Building and construction (questions 70-82)

#### 2.4.1 Built environment

#### Headline recommendations:

- Expand the Warmer Kiwi Homes Programme to deliver an additional 200,000 homes.
- Mandate NABERSNZ ratings for all office buildings, hospitals, hotels, and retail buildings by June 2023.

Abatement potential: 511.4 kT CO2e/yr.

The built environment contributes a significant amount of carbon emissions, however, is not attributable to its own sector. Decisions around our built environment impact all sectors in a multitude of ways – locations of development impact our transportation footprint, the efficiency of buildings impacts our heating footprint, and the choice of heating technologies impacts our electricity footprint.

We recommend that Government:

- Expand the Warmer Kiwi Homes programme.
- Mandate NABERSNZ Ratings for commercial buildings, including, all office buildings, hospitals, hotels, and retail buildings by June 2023.
- Create an Energy Performance Certificate (EPC) policy.

#### Expand the Warmer Kiwi Homes Programme

In 2009, the Government launched a "warm up NZ" scheme that provided subsidies to the retrofit of insulation and/or installing clean heating for pre-2000 houses and produced numerous cost-benefits, including energy and electricity savings, health benefits, and industry and employment impacts.<sup>9</sup>

The current programme is called "Warmer Kiwi Homes" and subsidises 90 per cent of the cost of ceiling and roof insulation, and also 90 per cent of the cost of an approved centralised heater. This is only available to low-income areas and community services card holders.

We **recommend** that the Warmer Kiwi Homes programme is expanded to cover an additional 200,000 homes and additional energy users (such as LED lighting). This additional coverage is aimed less at improving the quality of housing (which is a co-benefit) but instead drives towards reducing the overall energy consumption of residential homes which frees up renewable energy for use in other areas of the economy.

<sup>&</sup>lt;sup>9</sup> Energy Savings - http://www.healthyhousing.org.nz/wp-content/uploads/2012/03/NZIF\_Energy\_report-Final.pdf Cost Benefits - http://www.healthyhousing.org.nz/wp-content/uploads/2012/05/NZIF\_CBA\_report-Final-Revised-0612.pdf Health Benefits - http://www.healthyhousing.org.nz/wp-content/uploads/2012/03/NZIF\_Health\_report-Final.pdf Industry and Employment Impacts - http://www.healthyhousing.org.nz/wp-content/uploads/2012/03/NZIF\_Producers\_report-Final.pdf

| Туре                                       | Value Capital (\$) | Opex Change<br>(\$) | Carbon Change<br>(T/yr) | Useful Life<br>(Years) | Simple MACC |
|--|--------------------|---------------------|-------------------------|------------------------|-------------|
| Insulation                                 | \$1,040,000,000    | -                   | 20,200                  | 50                     | \$1,030     |
| LED<br>Lighting                            | \$10,900,000       | -                   | 9,900                   | 10                     | \$110       |
| Water<br>Heating                           | \$2,400,000,000    |                     | 115,600                 | 25                     | \$830       |
| Heat<br>Pumps to<br>replace gas<br>heaters | \$1,250,000,000    |                     | 100,000                 | 25                     | \$500       |

While, insulation does not offer large carbon reduction opportunities, its benefits come in the form of health savings. Research commissioned by EECA showed that homes that had been retrofit to a healthy standard accounted for a 43 per cent drop in hospital admissions for respiratory conditions, 23 per cent fewer days off school and 39 per cent fewer days off work. Accounting for these other benefits, this scheme has a cost to benefit ratio of 6:1, meaning for every \$1 spent, \$6 is gained.<sup>10</sup>

We also **recommend** that Government subsidises the uptake of electrical heating systems in homes through heat pump support, specifically to eliminate gas as a residential heating source. We have outlined in this document our plan for a bioeconomy, however, there will not be the same level of gas in the future bioeconomy as there is today. This gas needs to be maintained for uses where there are limited economic conversion opportunities, such as high temperature process heat or industrial process. Within the residential context there are low carbon technologies that already exist – heat pumps for hot water and heating, alongside induction cooking – that require support to remove capital cost hurdles.

#### Embodied emissions

We **recommend** that Government makes specific recommendations to address embodied emissions. While there is discussion around embodied emissions throughout the consultation document, no specific recommendations are made to address them.

The 2019 Thinkstep report<sup>11</sup>, showed that even without substitution of materials (e.g. wood instead of concrete or steel) the emissions from materials currently used, can be reduced substantially (19 per cent by 2025 in buildings).

We recommend that embodied emissions are included in the following three areas:

• where buildings demand lower carbon concrete, steel, aluminium and aggregate, it will help change the manufacture and sourcing of products and reduce industrial heat emissions.

<sup>&</sup>lt;sup>11</sup> https://www.nzgbc.org.nz/Attachment?Action=Download&Attachment\_id=2453

- where companies wishing to manufacture low carbon building materials are saying that they need demand, in order to invest.
- within the Carbon Neutral Government Program for all new projects (those commencing design after January 2023).

A key aspect of the MBIE Whole of Life emissions framework is setting 'baseline' carbon caps for new developments on a m<sup>2</sup> basis. We **endorse** this method and **recommend** that this is adopted by 2024 – new buildings that are underway today will be here well beyond 2050, so we cannot wait to implement this change.

We also **recommend** that Government considers the ability to change the carbon conversation from a production perspective to a consumption one. Setting targets for embodied emissions within, as a starting point, buildings will drive differing consumption behaviours. We also **recommend** Government consider incentivising the use of local materials to reduce transport-related emissions.

#### Building energy performance

Building energy efficiency in buildings, particularly new builds, is an area that New Zealand needs to go further and faster on. We suggest that two separate areas are considered for new and existing builds.

#### Existing Buildings

We **recommend** that NABERSNZ ratings are mandated for all office buildings, hospitals, hotels, and retail buildings by June 2023.

NABERSNZ is a system for rating the energy efficiency of commercial buildings. NABERSNZ ratings allow tenants to understand the operating expenses and the carbon footprint associated with the leased building while it also puts more onus on the owner to invest into energy efficiency to attract higher-value tenants. In Australia, this rating scheme has been mandated since 2010 and has seen energy savings of around \$1 billion and 7 million tons of carbon emissions saved. We also note that a recent report by Sense Partners<sup>12</sup> indicates that the total energy savings potential across NABERSNZ, for offices only, is at least 1180GWh.

Currently, a NABERSNZ rating is voluntary, and there has been a slow uptake for commercial buildings. In July 2020, Minister Parker announced that the Government would require NABERSNZ ratings on all new buildings for Government occupation. This is yet to be extended to existing tenanted and owned buildings.

Once established, NABERSNZ ratings are ideally self-funded as they become a necessity for building owners. In order to establish NABERSNZ ratings, we **recommend** that Government undertake analysis on the total cost of implementation, offers a \$2,500 incentive on the initial assessment for the first 500 buildings to speed up the uptake of NABERSNZ ratings, and consider a joint funding approach with the private sector to support the ongoing implementation of the scheme.

| Value Capital (\$) | Opex Change (\$) | Carbon Change (T/yr) | Useful Life (Years) | Simple MACC |
|--------------------|------------------|----------------------|---------------------|-------------|
| \$1,250,000        |                  | 6,400                | 10                  | 20          |

<sup>&</sup>lt;sup>12</sup> https://www.nzgbc.org.nz/Attachment?Action=Download&Attachment\_id=45058

#### New Buildings

We **recommend** that Government amends their energy efficiency for new builds target to 30 per cent more energy efficient by 2024, 60 per cent more energy efficient by 2027, and near zero energy by 2030.

We also note that decarbonising buildings could be supported by our proposed bioeconomy through adding green molecules to the existing gas network. For example, the expected carbon reduction from buildings could be achieved through a target of 20 per cent reduction of gas in 2030 supplied to this market segment as low-carbon gases. This would achieve the outcome sought by requiring appliance replacements to be electric or biomass, without stranding existing gas network assets and household plumbing systems.

We **recommend** that Government reflects following four initiatives in the ERP to proactively future proof new builds:

- Link the design of buildings with transport mode shift, including the expected uptake of EVS. Charging, parking, electricity fitouts should factor in the behaviour and needs of future EV owners.
- As above, buildings should be designed with future home energy management systems (HEMS) in mind. This is the idea that in future network businesses and energy retailers would be able to offer optimisation of roof top solar, batteries, remote management of appliances for either domestic economic optimisation or grid/energy support.
- Design out dependence on fossil fuel space and water heating now.
- Factor in the co-benefits of warm dry homes with mitigation into minimum building standards.

#### Energy efficiency first

We note that Government has indicated that industry needs to both fuel-switch and perform more efficiently. Therefore, we **recommend** that Government is clearer in its recommendations in this area.

The case for applying energy efficiency principles to existing and new buildings has long been understood. In the first instance, energy efficiency principles in build and retrofitting leads to lower consumption requirements for building occupiers. The behaviour of occupiers creates another distinction between profligate use and economical use for a given building configuration. The case for energy efficiency to be included in build and energy consumption behaviours is amplified by the emission implications. Energy efficiency should be the first priority for every energy initiative identified in the ERP. This is not the case at present. In New Zealand, the conversation around energy demand and reducing carbon often focuses on building more renewable energy generation sources. If we use less energy, we will have less need to develop new energy generation but this is not an either/or point, we need both.

We also see that a significant opportunity to reduce emissions and improve energy equity is to develop a far-reaching energy equity programme across all New Zealand homes and buildings. This would cut household bills, most notably amongst those struggling to adequately heat their homes in winter, business operating costs, and provide thousands of local jobs in every area of the country with homes and buildings. An inclusive and well-planned climate transition must have energy equity at its heart.

To accelerate and maximise the opportunities for energy efficiency in our homes and buildings, we **recommend** that Government implement a comprehensive energy equity programme. The following are tried and tested in New Zealand or overseas and can be implemented relatively quickly:

- The Warmer Kiwi Homes programme should be applied on a wider scale, noting health cobenefits.
- Introduce energy labels for homes.
- Introduce energy labels for commercial office buildings.

### 2.5 Agriculture (questions 83 – 88)

Headline recommendation: Create an accelerated pathway for the development and adoption of biogenetic methane emissions reduction technologies. This should involve scaling up public and private funding to more than \$100m/year by 2025 and lifting the urgency of public and private sector cooperation to invest in a strategic, structured, and long-term commercial orientated approach to reducing biogenic methane emissions.

Abatement potential: 5,400 - 7,300 in budget period 1; 12,600 - 15,400 in budget periods 2 and 3.

#### Enhanced research and development to reduce biogenic methane emissions

This section outlines a proposal for government and the private sector to jointly fund and substantially accelerate R&D into ruminant animals with an initial focus on pathways to reducing biological methane emissions from agriculture in New Zealand. This work would build on and complement existing R&D activity.

The proposal is built on the idea that a joint public-private approach with a focus on commercialisation of products fit for New Zealand agriculture, and clear benefits of the IP coming back to New Zealand agriculture, will significantly raise the prospect of achieving ambitious methane emissions reduction without compromising stock numbers.

We envisage the model being developed to include collaboration with international firms whose comparative advantages complement New Zealand firms to everyone's mutual advantage. We are optimistic that there is such a model that will attract the required funding from the SBC agricultural group members. Success of such a venture would see New Zealand's methane emissions reduced while agriculture production thrives.

New Zealand's agricultural emissions account for the greatest proportion (48 per cent) of total national greenhouse gas emissions. Of the 48 per cent, around 73 per cent is from biogenic methane created by the ruminant animals we farm. This agricultural emissions profile is both a serious risk to the New Zealand economy and a huge opportunity.

#### The Risk

The research effort to date and planned for the near-term has not been commensurate with the risks associated with New Zealand falling short of its required contribution to the global 1.5oC target, including a growing direct emissions liability resulting from inaction, and global export market pressures to lower our agricultural emissions inherent in our products, which is already evident. It has also been disproportionate to the opportunity that our emissions profile creates for us to lead in this area of science.<sup>15</sup>

The growing liability is reflected in the Climate Change Response Act 2002 which requires biogenic methane emissions in 2050 to be reduced by 24 to 47 per cent compared to 2017 levels. The CCC reported that reductions of 24 per cent can be achieved using currently available practices and technologies, whereas achieving the 47 per cent would require either technological breakthroughs or significantly reduced agricultural production from livestock and land-use change.

Solely relying on existing technologies and practices to achieve the 24 per cent reductions by 2050 will be a risky strategy, especially when many countries, including our trading partners, are increasingly looking to

reduce methane emissions as a quick way to slow global warming in the near-term.<sup>13</sup> This growing international pressure was confirmed by the COP26 Global Methane Pledge to reduce 2020 methane emissions by 30 per cent by 2030.

We estimate that if the 47 per cent reduction pathway is pursued and assume the CCC's option of achieving that through reductions in livestock numbers, New Zealand faces an absolute loss of output of \$412m/year in 2026 growing to \$7b/year by 2050 from New Zealand's dairy, beef and sheep sectors. That would equate to a loss of direct GDP contribution of \$189m/year in 2026 rising to \$3b/year by 2050.<sup>14</sup> <sup>15</sup> This does not include the potentially significant export market impact that could arise from the pressure that is already being felt by our sector's exporters to lower the level of agricultural emissions inherent in our products.

#### The Alternative

To respond to this international pressure to do more about methane liabilities, the alternative approach for New Zealand, and that our members **recommend**, is for Government to pursue a much more ambitious biogenic methane emissions reductions pathway than 24 per cent by 2050 by significantly accelerating our research into methane mitigation technologies around an international commercialisation model. Our proposal would see greater emissions reductions while maintaining stocking levels and increasing productivity.

#### The Opportunity

The opportunity is to work with overseas firms where their comparative advantages complement our local comparative advantages. We propose the use of public private partnerships that are based on a commercial model, orientated towards products fit for NZ systems with a clear framework for the ownership and access to IP.

If New Zealand can develop existing technology leads while also developing alternative options to combat our growing agricultural emissions liabilities, there may be global spin offs. Global rumen emissions were 3,220 MtCO2e in 2017.<sup>16</sup>

As a thought experiment, if the global price averaged \$84/tCO2e,<sup>17</sup> there would be an opportunity to avoid total methane emissions liabilities of up to \$242 billion per year globally. Therefore, even if New Zealand researched technology were only able to mitigate 10 per cent of methane emissions, there could be a global market effectively worth \$242 billion per year but that is not the driver of this proposal.

So, the opportunity is for New Zealand to avoid the serious risks our high levels of agricultural emissions represent, provide ourselves with the R&D platform that could unlock technologies for the rest of the world, as well as maintain and potentially improve our agricultural productivity.

<sup>&</sup>lt;sup>13</sup> See https://www.bbc.com/news/world-59137828

<sup>&</sup>lt;sup>14</sup> For each year, these losses represent the total reduction in livestock numbers compared to baseline, without subtracting reductions that had already occurred in preceding years.

<sup>&</sup>lt;sup>15</sup> In net present value (NPV) terms these estimates translate into losses from New Zealand's dairy, beef and sheep sectors of \$339 m/year in output in 2026 growing to \$1.7b/year by 2050. The NPV of the loss of direct GDP contribution is estimated to be \$156m/year in 2026 rising to \$789m/year by 2050 (Discount rate of 5 per cent is used).

<sup>&</sup>lt;sup>16</sup> Based on the 2021 Global Methane Report, which states methane emissions from ruminants were 115 Mt in 2017 (table 2.1). This is multiplied by 25 to determine GWP in terms of CO2e.

<sup>&</sup>lt;sup>17</sup> This is CCC's estimated emissions value for 2025.

#### The Imperative for public-private partnership

We **recommend** a significant increase in the funding, and an acceleration in the urgency, of co-operation between the business sector and government to invest in a strategic and structured, long-term approach to solving our biological methane problem. It recognises the challenges in agricultural emissions R&D:

- Private sector focus on short term investment horizons.
- Conflict between focus on individual projects as distinct from systems or portfolio approach.
- Sub optimal investment in R&D because of the challenge to monetise innovation.

It recognises government and the private sector brings different strengths to the table but their incentives are aligned. It recognises that benefits flow to the public good and to the private sector partners.

#### The Proposal

We **recommend** that the Government double funding from \$25m/year to \$50m/year from 2022 and increase funding further to more than \$100m/year from both Government and business by 2025 with the objective of ensuring NZ continues to have the ongoing liberty to run our rumen-based farming.

A possible mix of private and public funding could look as follows, assuming Government share of methane R&D spend mirrors that for overall NZ R&D spend (37 per cent).<sup>18</sup>

Table 1. Spend on NZ agricultural methane R&D (\$m p.a.)

|                 | Public             | Private | Total               |  |
|-----------------|--------------------|---------|---------------------|--|
| Current         | \$8m <sup>19</sup> | \$5m    | \$13m <sup>20</sup> |  |
| Proposed target | \$64m              | \$36m   | \$100m              |  |

Table 2. Summary of avoided economic costs (undiscounted values, and present values)

|                        | 2026       | 2035   | 2050   |   |
|------------------------|------------|--------|--------|---|
| Avoided loss of output |            |        |        |   |
| Undiscounted           | \$412m     | \$2.9b | \$6.8b |   |
| Present value          | \$339m     | \$1.6b | \$1.7b |   |
| Avoided loss of GDP co | ntribution |        |        |   |
| Undiscounted           | \$189m     | \$1.3b | \$3b   | - |

We **recommend** that the domestic public and private R&D spend would be in addition to revenue sourced from an agricultural emissions pricing mechanism, and until new technologies are brought into the market.

The significantly increased funding could be focused on initiatives such as;

- i. Immediately addressing bottlenecks in the availability of key infrastructure for undertaking research into methane mitigation such as chambers, in-field devices and supporting infrastructure for measuring methane.
- ii. Providing a continuing pool of trained technicians to use this infrastructure.

<sup>&</sup>lt;sup>18</sup> This figure is the average for 2013, 2015, 2017, and 2019 based on OECD data on gross domestic spending on R&D (GERD): https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm.

<sup>&</sup>lt;sup>19</sup> We note that the government contribution to methane-specific R&D spend could be higher, but we were unable to establish this due to absence of detailed data.

<sup>&</sup>lt;sup>20</sup> This is the average of \$10m and \$15m mentioned previously.

- iii. Building New Zealand's rumen science capability by attracting two leading rumen academics to relocate to NZ along with their research groups.
- iv. Establishing a new methane mitigation discovery programme with offshore collaborators (for example, Australia or Ireland) to further develop local IP that has not been fully investigated yet. (This could expand on the work of the Global Research Alliance).
- v. Setting up four international science challenges to attract the best teams to the biggest issues to better understand the rumen.
- vi. Creating PhD and Postdoctoral scholarships to ensure ongoing supply of local talent.
- vii. Boosting enabling programmes to support delivery of novel technologies to market, (i.e. delivery methods that work on farm, low methane genetics, feeds etc).

We note that this would not be constrained to New Zealand based companies. While the focus is on solution that fit the New Zealand farming situation, we envisage some combination of local and international companies involved in the commercialisation process.

#### Principles guiding the operation of the joint funding mechanism

This initiative is focused on a cooperative approach by business and government with each playing to its strengths. Related pure fundamental government research and industry research likely to assist this initiative would continue. However, the organisation and operational drivers around this joint funding proposal would be based on the following principles:

- i. To incorporate strong commercial drivers into the R&D effort rather than simply allocate new (joint) funds to research.
- ii. To ensure that existing technologies get to market as quick as possible with whoever is best placed to make that happen even with the use of public funds. The prize is methane mitigation and this programme will balance on public benefits with financial returns on IP commercialisation
- iii. To ensure the pipeline of new technology opportunities is kept primed as the vehicle for deploying the funding will need to own or have a say in the IP. It will need to control who has the commercial rights to the extent required to ensure that NZ farmers get access to the products arising from the IP.
- iv. Government to accelerate its existing programme to achieve a robust, simple and clear pathway for the regulatory approvals that will be required for the suite of methane mitigating technologies that emerge from the discovery and development pipelines.

To increase the likelihood of achieving product focused outputs that can have an impact it would be optimal to manage this initiative along the lines of primary sector corporate utilising skills such as:

- Market insights into product opportunities and current and future needs and trends to guide the ongoing research strategy.
- An R&D capability that includes both local and international partnerships that allows delivery of capability and capacity in fundamental research, new intellectual property through to highly applied product development.
- Capital raising, funds and asset management, resource allocation and risk management.
- Business development and commercialization skills including flexible, objective driven IP management.

It is likely that some of these capabilities exist in the current agricultural GHG targeting entities but could also be leveraged from local primary sector corporates, what is important is that there is a commercial focus to the investment of available funding.

A report containing detailed information related to the above proposal to advance R&D to reduce biogenic methane emissions is being completed by the SBC/CLC Agriculture Working Group. This report is currently being finalised and will be released in early December.

This proposal (and our SBC/CLC Agriculture Working Group report mentioned above) is focussed on advancing research and development to reduce biogenic methane emissions. However, we also acknowledge the importance of addressing and reducing our nitrous oxide emissions. Therefore, we **recommend** that Government work with the Primary Sector to consider how research and development should be advanced to reduce nitrous oxide emissions.

#### Recycling agricultural emissions pricing revenue into agricultural R&D

The He Waka Eke Noa partnership (HWEN) is currently working to develop a pricing mechanism for agricultural emissions. We understand that any proposals pertaining to this area are deliberately excluded from this discussion document and will instead be consulted on by HWEN themselves at the end of this year. However, as mentioned under section 4.5 - research and innovation section, we recommend that any revenue produced from this pricing mechanism should be hypothecated into research and development focused on reducing agricultural emissions.

#### A long-term agricultural aspiration strategy needs to be developed

We **recommend** that Government in partnership with Primary Industry develop a long-term aspiration strategy for New Zealand agriculture. This would enable government to communicate both with New Zealand farmers and communities about the future of our agricultural sector in a low-emissions world, specifically what we need to be doing and also to consumers about what we intend to do.

This might be along the lines of the *Pathway to Dairy Net Zero* (which Fonterra and LIC are both signed up to) which was released by the Global Dairy Platform highlighting the aspirations of dairy globally.

A New Zealand aspiration for agriculture should come from a group with cross-agriculture sector representation, with public farmer consultation included. The He Waka Eke Noa partnership is the closest we currently have that meets the requirement as it has governance level and working group arrangements.

The long-term aspiration should look beyond the timeframes of He Waka Eke Noa, which is very task focussed on relatively short-term milestones (work programme to 2025). An articulation of a long-term aspiration for New Zealand agriculture could sit alongside the narrative around forestry and land use and factor in what agriculture could look like if we adopt the ruminant research programme and aim for a 47 percent reduction in biogenic methane.

## Encouraging uptake of on-farm mitigation practices ahead of implementing a pricing mechanism for agricultural emissions

We **recommend** that on-farm mitigation practices are clarified and defined. This will better frame what has to be done, the size of the task, and government's roles. The real challenge lies in the absence of mitigation options, especially for biogenic methane, with or without emissions pricing.

Regenerative agriculture has a role to play in supporting the agriculture sector's low-emissions transition, as well as improving the sector's resilience to the impacts of climate change.

## Reducing barriers to changing land use to lower emissions farming systems and products

We **recommend** that a coherent forestry strategy is established that addresses the ongoing need to offset carbon emissions, and balances between exotics and natives and the need for the development of an accompanying bioeconomy.

### 2.6 Waste (questions 89 - 99)

**Headline recommendation**: Adopt a target to reduce waste biogenic methane emissions by 40 per cent by 2035.

We **support** the CCC's recommendations in this area, including the recommended target to reduce waste biogenic methane emissions by 40 per cent by 2035. We do note that New Zealand's waste emissions have reduced 19.3 per cent since 1990, making it the only emissions source that is currently on the right trajectory. We recognise the role and importance of the circular economy in contributing to these emissions reductions, and therefore encourage measures to continue this mitigation trajectory for waste.

We **support** more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste. Waste can be seen as complicated and efforts to enhance consumer understanding and compliance and efforts to see how particular interventions fit within the wider picture.

We **recommend** Government work with the private sector to develop an approach to standardisation of collection systems that takes into account the range of collection systems in operation.

We also reiterate our previous recommendation to develop national standards for waste collection, inclusive of material type for collection and collection receptacles.

We **agree** the proposals outlined in the discussion document should also extend to uncontrolled activities, such as, farm dumps, open burning and unmanaged disposal sites given the long history of reductions from managed disposal sites. Farm dumps have not seen emissions reduce over the last 30 years. To continue this trajectory, the next focus after 2030 should be the other sources of waste emissions as seen in table 12 of the consulting document e.g., farm dumps.

In addition, we **recommend** that Government investigates how the waste sector fits into the bioeconomy and what should be occurring with what waste, where, in order to provide the least cost solution for New Zealand overall. Items to consider include:

- Sources of different types of waste.
- Whether there are thermal/electrical loads around high waste areas.
- Whether should compost be prioritised over other organic disposal methods.
- Whether should anaerobic digestion be prioritised over other organic disposal methods.
  - Whether AD/pyrolysis be utilised to provide inputs into energy systems, including:
    - Local energy hubs for large industries.
    - Liquid fuel consumption market, including petrol, diesel and LPG.

### 2.7 F-gases (questions 100 - 106)

Headline recommendation: Expand the GIDI fund to support facilities that are looking to upgrade their facilities to lower GWP gases.

We **support** the CCC's recommendation that emissions from fluorinated gases must be reduced. However, there are some constraints on the speed with which SBC members can reduce emissions from fluorinated gases which should be taken into account when setting the target dates and limits.

#### Phasing down the bulk import of HFCs more quickly than required under the Kigali Amendment

The discussion document allows for Government to "fast track progress through a cross sector reduction of HFC refrigerants in heating and cooling systems". The transition of most models now are achievable but solutions are yet to emerge for some Frozen Carbonated Beverage (FCB) and Ice Machines which still use HFC.

If progress is fast-tracked, we **recommend** that Government provide financial assistance for the purchase of equipment required to service and maintain hydrocarbon equipment safely given it is a flammable gas. We also **recommend** that Government provide subsidies and rebates like they do for cars and heat pumps. For example, the New South Wales state Government in Australia offers a commercial refrigerator rebate.

## Restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available

SBC/CLC members generally **support** restricting the import or sale of finished products that contain highglobal warming potential HFCs to the extent that there are alternatives available that can be safely serviced and maintained.

In addition, SBC/CLC members **support** utilising lower global warming potential refrigerants in servicing existing equipment providing the practice is compliant.

The timing for introducing these measures will be critical given the need to expand the skilled labour workforce to meet demand installing, retrofitting, and servicing refrigerant systems products, delays in the global supply chain for the technology due to Covid, the need for technical testing, and the availability of suitable refrigerants.

We **recommend** that Government work with the private sector to revise the proposed timelines and GWP limits on certain application categories to reflect the varying size and scale of our members' operations.

During the phasing in of the new technology described we **recommend** that the Government consider the following ways to support the acceleration of refrigerant emissions reductions:

- listing refrigerant technicians as a skills shortage to grow and relieve a pressured and small group
  of technicians currently servicing the industry;
- subsidisation or rebate schemes for replacement of legacy systems with equivalent lower GWP systems;
- improved leak tightness;
- reduce the amount of refrigerants used in equipment; and
- putting in preventative maintenance programmes.

We also **recommend** that Government consider natural refrigerants, which are available already (R774 and R290) and commonly used, as alternatives to HFC refrigerants that New Zealand could utilise (noting that additional training and risk management may be required, particularly for R290 given it is a flammable refrigerant).

We **recommend** that Government provide funding for facilities that are looking to upgrade their facilities to lower GWP gases. EECA is providing significant funding and support for industrial processes to transition away from fossil fuel use through the GIDI Competitive Fund. This fund could be extended to include upgrades for F-gases.

### 2.8 Forestry (questions 106 – 114)

Headline recommendation: Include in the ERP a specific action to investigate what policy actions would encourage native plantings and balance the agricultural sectors on going requirement for land with the case for forestation.

We agree that forestry can provide a buffer in case other sectors of the economy under-deliver reductions. However, we think the focus should still be maintained on reducing gross emissions across the economy.

We believe forests have an important role to play in achieving the 2050 target but that this role should be balanced against the alternative uses for land, including agricultural production, and the needs of a bioeconomy in the all-energy strategy. (See also our commentary on bioeconomy in section 4.7, given the role forestry will play in biomass feedstock supply.)

However, exotic afforestation may not deliver many of the co-benefits that indigenous forests do, and focus should remain with permanent forests. We therefore **support** Government's commitment to maintain effective incentives for planting new forests of the right type and for the right purpose. We **recommend** Government investigate what policy actions would encourage native plantings whilst recognising the role that exotic forestry will play in our transition.

Finally, we note the distinction between forestry and forests. Native biodiversity provides benefits beyond carbon sequestration. We **support** pursuit of mitigation policies that align with and support the delivery of the New Zealand biodiversity strategy and the NPS on biodiversity. See section 3.1 for more commentary on this.

### 3. Meeting the net-zero challenge

### 3.1 Transition pathway (questions 1-7)

Headline recommendation: Establish:

- A Climate Advisory Group to advise the Climate Change Response Ministers Group comprising business and other leaders from across the economy.
- A regular forum between Chief Executives from the public and private sectors on finalisation and implementation of the ERP.
- Sector-specific collaborations between government and business to respond to individual decarbonisation challenges.

We agree that the ERP, and our country's low carbon transition, should be guided by a set of principles.

## New principle – close collaboration between business and government to develop and implement the ERP

In addition to those principles listed, we **recommend**, as the CCC recommended, the addition of a principle relating to working in partnership with business. We agree that everyone has a role to play and welcome the reference in the discussion document to the Government's intention to work with all of society – including business – to implement the plan.

It is clear that there is much work to be done to develop an ERP that meets the emissions budget for the first period. But our members are ready to step up to the challenge to help flesh out the ERP and close the ambition gap. Many are already doing so: the CLC's Third Anniversary Snapshot report showed that these businesses have committed to invest \$9.5 billion over the next five years to reduce their emissions.

We are ready to work alongside the Government to develop a plan that will deliver. For this to be successful, it will require a genuine partnership between government and business because only by working together will we be able to bend New Zealand's emissions curve in the short amount of time we have left. In our CCC submission we recommended, and we **recommend** here again, that government partner with business to allow for the co-development of solutions.

To date the partnership has been more of the traditional kind – i.e. one where SBC and CLC respond through submissions – rather than a collaborative process where sustainable businesses bring ideas to the table during the development of the ERP. This partnership should be focussed on the generation of outcomes to achieve the desired future state in 2050, providing pace that enables the market to respond and adapt, and flexibility in policy to enable business to shape solutions that work on the ground.

We **recommend** the following practical ways for business and government to work more closely and effectively together to drive the transition to a low-emissions future for New Zealand:

- i. A Climate Advisory Group to advise the Climate Change Response Ministers Group comprising business and other leaders from across the economy as the current ERP is developed and implemented.
- ii. A regular forum between Chief Executives from the public and private sectors on finalisation and implementation of the ERP. For example, SBC would be very happy to facilitate regular discussions

between the public sector's Climate Change CE Board and Chief Executives from across our membership.

iii. Sector-specific collaborations between government and business to respond to individual decarbonisation challenges. There are some areas where there are natural forums or formats for these collaborations, and others where innovative approaches might need to be explored.

We have highlighted practical opportunities for collaboration between business and government on specific challenges using boxes like this one throughout this document.

We also **recommend** specific consideration as to how government can best engage with small and medium enterprises to ensure their voices are heard in the low carbon transition.

#### A path that is clear, ambitious and affordable

We **support** the principle that our transition path should be clear, ambitious and affordable. We **recommend** this principle be augmented with the addition of the need for a pathway that is also credible. Over the last three decades, New Zealand has failed to reduce its emissions but rather has seen them rise like no other developed country. As a country, we are about to adopt domestic emissions budgets. The Government has also announced an enhanced 2030 Nationally Determined Contribution (NDC) under the Paris Agreement.

Now is the time to translate ambition into action and develop a credible plan to achieve our domestic emissions budgets as well as our new NDC. New Zealanders need to see realistic pathways to achieve both of these targets. In relation to the NDC, this includes transparency on the role of offshore mitigation, possible sources and cost of this mitigation, and who will bear the cost for their purchase.

#### The role of nature-based solutions

We **support** the consideration of environmental benefits beyond mitigation when implementing the ERP which is identified in the ERP discussion document as one of the 'guiding principles' for the ERP. We **support** investigation of mitigation co-benefits through nature-based solutions including, for example, blue carbon, and **recommend** more clarity be provided on enabling measures and mechanisms that will be put in place.

There are a range of international guidelines that can be drawn on to develop New Zealand-specific frameworks, such as the Sustainable Blue Economy Finance Principles and UNEP FI Guidance to support investors to make investments that are directed towards sustainable development.

### 3.2 Working with our Te Tiriti partners (questions 8-12)

Headline recommendation: Government work in partnership with lwi/Māori and local government to develop a strategy to ensure that the principles of Te Tiriti o Waitangi are embedded in subsequent ERPs.

We **support** a genuine, active, and enduring partnership with iwi/Māori, including iwi/Māori business, as reflected in our submission to the CCC.

The CCC recommended, and we **support** Government working in partnership with lwi/Māori and local government to ensure that the principles of Te Tiriti o Waitangi are embedded in this emissions reduction plan. This is not currently the case and we support ensuring this vitally important work forms a key part of the next ERP.

### 3.3 Making an equitable transition (questions 13-20)

**Headline recommendation**: Complete the Equitable Transitions Strategy by the end of 2023 in partnership with business and other stakeholders.

We **support** a fair, equitable and inclusive transition to a sustainable, climate-resilient and zero carbon Aotearoa New Zealand. Achieving equity in the transition is central to creating social licence for an ambitious and enduring pathway to a zero carbon future in which people and nature thrive.

SBC and CLC therefore strongly support the recommendations of the CCC in this area.

Specifically, we **recommend** Government to work in partnership with business and other social partners to develop an Equitable Transitions Strategy that includes a concrete articulation of the future that New Zealand is working toward and the policies that will support us to get there. To that end:

- A Terms of Reference and timeframe for the Equitable Transitions Strategy should be included in the ERP. This must be underpinned by robust analysis and economic modelling to ensure all New Zealanders understand the likely state of our economy in 2050 and which sectors will be most impacted by the transition.
- ii. A process to develop the Strategy that is inclusive and ensures all New Zealanders including business people have a say in the policies, plans and actions needed to support vulnerable communities and those most impacted by the transition.
- iii. Acceleration of the Strategy's development. Whilst there is a need to ensure a robust process, we cannot wait until the end of the first budget period to deliver this work. This work should be complete by the end of 2022. Businesses, workers and communities are being impacted now. They need a plan for the future we can all get behind.
- iv. In addition, there are concrete actions that can be taken now to support equity in the transition pending the development of an Equitable Transitions Strategy.

We explain our recommendations in each of these areas in more detail below.

#### Terms of Reference for an Equitable Transitions Strategy

New Zealanders need clarity on the likely future cost of carbon and need to adapt to a changing climate, the impact that will have on key sectors, and the future we collectively wish to shape based on the economic transition that will require. New Zealand needs to develop a transition pathway that is inclusive and ensures no one is left behind.

We **recommend** the final ERP contain a Terms of Reference for the Equitable Transitions Strategy. The Terms of Reference should:

- i. Commission economic and social analysis to inform the development of the Strategy and ensure New Zealanders understand which sectors will be most impacted by the transition.
- ii. Articulate how the Strategy will be developed in partnership with lwi/Māori.
- iii. Describe at a high level the process for development of the Strategy.

- iv. Link the Strategy's development with other key governmental strategies, policies and plans.<sup>21</sup>
- v. Provide for the following critical components of the Strategy:
  - a. Adapting the education system to equip New Zealanders with the skills needed for a low emissions future.
  - b. Supporting workforce transition, including redeploying and upskilling workers from highemissions sectors to low-emissions sectors.
  - c. Factoring distributional impacts into climate strategies and policies.
  - d. Mobilising finance and funding for initiatives that support an equitable transition by redirecting a portion of hypothecated ETS revenue into a contestable fund.

SBC/CLC would welcome the chance to engage on this Terms of Reference on behalf of its members and be part of the development of the Equitable Transitions Strategy.

#### Economic analysis to inform the development of the Equitable Transitions Strategy

The transformation of the economy from where it is today to a decarbonised and climate-resilient one will take the form of a major structural change. We **recommend** that Government commission analysis that explores the likely future state of the economy based on the transition pathway, to form a clear articulation of the future state that policy needs to respond to.

The last time New Zealand made a major structural change, in the mid-1980s the focus was the need for major economic change with sudden regulatory shifts rather than ordered, evidence-based programme with an equitable transition as a core consideration. This "series of disequilibria in a relatively compressed timeframe" resulted in "deregulatory momentum" but resultant negative economic and socioeconomic impacts. <sup>22</sup>

We have an opportunity with the low carbon transition to learn from the past. The Paris Agreement incorporates the concept of a "just transition". This is elaborated in International Labour Organization's (ILO) 2015 Guidelines for a Just Transition which describes a process "towards an environmentally sustainable economy, which "needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty".

In order to design an orderly transition, we need to create a shared and unifying vision of the future we are working towards, grounded in economic reality. For example:

 As the discussion document states, the ETS will see an emissions price to drive investment and behaviour change to reduce gross emissions. The future price of emissions is not only relevant to business decision making but also the pace of the transition and our ability to collectively ensure it is an equitable one. A fast-rising carbon price risks impacting most lower income households without the flexibility to pay for new vehicles, appliances, and other technologies. We need to understand the likely price path for carbon in New Zealand in order to better understand who will

<sup>&</sup>lt;sup>21</sup> This includes those existing and in development. For example, the Government's draft Digital Strategy, Infrastructure Plan, National Transport Network, Freight and Supply Chain Strategy, National Adaptation Plan.

<sup>&</sup>lt;sup>22</sup> Lewis Evans, Arthur Grimes, Bryce Wilkinson, David Teece (1996) Economic Reform in New Zealand 1984-95: The Pursuit of Efficiency Journal of Economic Literature, Vol. 34, No. 4 (Dec., 1996), pp. 1856-1902

be impacted to better understand what complementary measures will be required in which sectors.

New Zealand is setting out on a process of carbon budgeting under the Act. As those budgets decrease, and the amount of carbon we can emit across the economy is limited, we will be forced as a country to embrace a discussion on highest and best use of CO<sup>2</sup><sub>e</sub> within our budgeted envelopes. This will see some industries impacted adversely while others grow and still new industries are established. We need to better understand what these sunset, growth and 'sunrise' industries will be in order to best support businesses, employees and communities through the transition.

This work should form the starting off point for developing the Equitable Transitions Strategy.

#### Accelerate the timeframe for the Strategy's development

The discussion document does not specify the process or timeframe by which the Equitable Transitions Strategy will be developed and implemented, with commentary stating that the strategy will be "drafted over the coming years". The Commission's recommendation that the Strategy is developed during the first emissions budget period would see the Strategy delivered by mid-2024.

We **recommend** that this timeframe be brought forward with work on the Strategy to commence now, with the development of its Terms of Reference, and delivery at the end of 2023 at the latest. For an equitable transition to succeed, substantive action needs to start now and include long-term planning to avoid negative impacts, and make sure costs and impacts are understood and anticipated. Rather than waiting for the ideal Strategy to be developed over the course of years, we **recommend** its development and publication be fast-tracked and that the Strategy remains a living plan that evolves and is updated at regular intervals.

Accelerating the introduction of the Equitable Transition Strategy will enable its development to be linked to the Government's Economic Plan (due August 2022), National Energy Strategy (2022) and National Adaptation Plan (August 2022).

We have practical suggestions about how business, along with other social partners, can collaborate with government to develop the Strategy in this timeframe, which we would be happy to discuss.

### 3.3.1 Actions to be taken now

In addition to accelerating the development of an Equitable Transitions Strategy, we **recommend** Government to take certain concrete actions now to support impacted firms, employees, and communities and support their transition pending development of the Strategy.

We also support actions to be taken now to put equity at the heart of the transition and ensure every policy decision is viewed through not just a mitigation lens but also a just transition one.

In addition to other measures mentioned in the discussion document we **recommend** Government take immediate steps to:

- Consider all climate policy decisions through a just or equitable transition lens. This could be done by expanding the Climate Impacts of Policy Assessment to include consideration of the impacts of the policy on equity in the transition to a zero-carbon economy.
- Develop a method of monitoring and review of impacts of policy on the equitable transition. This could build on existing frameworks applied to measure wellbeing such as the *Living Standards Framework* and *He Ara Waiora*.
- Partner with business groups, including SBC and CLC, to develop business-to-business solutions to help ensure equity in the transition across the supply chain, e.g. through scalable prototype projects to:
  - build capability within companies across the supply chain to transition toward lower emissions business models and manage workforce and other transition implications; and
  - develop proactive skills and employment pathways to keep displaced workers connected to decent, meaningful work.

#### CASE STUDY: REGIONAL COLLABORATION ON THE FUTURE OF WORK

SBC members and CLC signatories are already leading out to ensure our low carbon transition has people at its heart.

One example is a collaboration Christchurch International Airport Limited (CIAL), Lyttleton Port Company (LPC) and Orion Group are all taking part in. They are three of 17 Christchurch City Holding Limited organisations using a shared platform, Hive, which is helping them to prepare for the future of work and the challenges that poses for their people and communities.

Created by FutureWork Studio, the shared platform allows businesses like CIAL, LPC and Orion to leverage the diverse capabilities that already exist within their organisations to share that talent and support skills matching. It also extends to building the capability within organisations by creating skills development pathways as well as new ways to identify and retain talent at a time when skills shortages are becoming an increasingly critical issue.

### 4. Aligning systems and tools

# 4.1 Government accountability and coordination (questions 21-23)

Headline recommendation: Establish a central unit within the Department of Prime Minister and Cabinet to oversee the interdepartmental climate change response.

The CCC identified a need for close coordination amongst relevant government agencies and departments, and for roles and expectations of these and other agencies to be set out, and accountability mechanisms defined. We **supported** that recommendation. We also called for a clear and efficient structure – and appropriate resourcing – for this coordination, which should allow for policy to be developed in close partnership with the private sector at the working level.

We now build on that recommendation. Climate change is the defining challenge of our time. Achieving a world limited to 2°C of warming, let alone 1.5°C in line with the Act, is going to require a global economic transformation on an unprecedented scale. We encourage Government to respond to climate change as the crisis it is.

The machinery of government must reorganise itself to be able to respond to the climate challenge. It will take time to get the right structures, mandates, and skills in place to unlock an effective all-of-government response to climate change. In order to be effective, the central government response must be resourced appropriately. As the coordinating agency for the climate change response, the Ministry for the Environment needs to have increased funding to fulfil its coordination role across the public sector.

Pending that recalibration, we **recommend** a different approach to the status quo. The Government has risen to the challenge of crises of recent times – such as the COVID-19 pandemic and the 15 March terror attacks – by activating government's crisis response and establishing a central unit within the Department of Prime Minister and Cabinet to oversee the interdepartmental response. We see a need for a similar approach to be taken in relation to climate change and **recommend** the Government to move swiftly to establish a structure empowered to allocate resources and take decisions necessary on climate policy with the urgency this challenge demands.

We are pleased to see that Government picked up on our recommendation to undertake a cross-agency stocktake of existing emissions reduction measures through producing the discussion document on the ERP. This provides a good foundation for the development of new policies to meet the emissions budgets. We look forward to engaging with Government on those through the ERP.

In support of that, we **support** the CCC's *Enabling recommendation 2: Coordinate efforts across Government*, and in particular, the recommendation to establish Vote Climate Change as a specific multi-agency appropriation, which consolidates existing and future government funding for climate change mitigation and adaptation activities.

We also **support** the Commission's recommendation regarding expansion of the *Climate Implications of Policy Assessment* tool to consider climate change in the development of all new policies, regulations, and fiscal proposals. We **recommend** that Government consider broadening this recommendation to specify that this includes considerations relating to mitigation, adaptation and an equitable transition. See also section 3.3– equitable transitions.

### 4.2 Funding and financing (questions 24-27)

Headline recommendation: Government to support measures and mechanisms that overcome the challenges of financing projects that contribute to emissions reductions but for which monetising the emissions benefits is not possible. These projects may be technically challenging or projects that simply require more effort than the low hanging fruit projects banks and other finance companies are more likely to assist.

#### Support for CCC finance recommendations

We **support** Government taking the following actions recommended by the CCC to mobilising finance for low emissions and climate-resilient investments:

- Investigating and developing actions government can take to help mobilise private sector finance.
- Exploring the extension of the mandatory climate-related disclosure regime to cover a broader range of activities, for example, public entities at the national and local level.
- Evaluating the benefits of extending mandatory climate-related disclosure to cover emissions enabled by loans, from financial institutions, over a certain threshold.

We welcome the recent announcement of the intention to issue sovereign green bonds in New Zealand. We also **support** the work of Toitū Tahua: Centre for Sustainable Finance in this area. In particular, we encourage Government to support implementation of the Sustainable Finance Forum's 2030 Roadmap, including through a Whole of Government Sustainable Finance Strategy, as well as the recommendations in Toitū Tahua's response on the ERP discussion document under the headings of:

- Setting the long-term strategic direction, industry, infrastructure and investment planning and coordination.
- Laying the foundations for a sustainable financial system.
- Enabling policy and regulatory settings for investment in the net-zero carbon transition.
- Measures to connect available capital with investible projects and products.
- Promoting impact-led investment models.

#### Role of Government in mobilising capital to target emissions outcomes

Key barriers our members report in relation to flow of private capital into low emissions investment in New Zealand include uncertainty regarding Government policy, clarity on low emissions investment options and return on investment relative to higher emissions alternatives.

The Government can play an important role to support business to bridge the gap between activity that is GHG-emitting and equivalent activity that reduces GHG emissions by monetising the value of the emission reduction outcomes.

In many instances, externalities (benefits) of decarbonisation are not directly quantifiable in dollar terms – despite clear benefits to intergenerational wellbeing and hence to the economy – so there is a case for governments to meet that gap so investment proceeds. The ETS imposes obligations on some emitters and monetises emissions reductions, principally carbon sequestration from forestry. However, the effective ETS price does not completely reflect the full cost of carbon, nor does it monetise the mitigation of risk associated with climate adaptation.

There are also market failures such as lack of information or high transaction costs holding up potential decarbonisation projects that, again, governments can play a role in compensating for. The Green Investment Fund is an example of government assisting in this case.

We see an expanded role for government to bridge the gap between activity that is GHG-emitting and equivalent activity that reduces GHG emissions by monetising the value of the emission reduction outcomes. The assistance could take several forms, and these would be project specific.

We **recommend** Government develop a programme of results-based procurement or financing. This would see the Crown pay for the delivery of a service that delivered an agreed emissions outcome but would not pay the full amount if pre-agreed outcomes are not achieved. The same would apply to an outcome-based financing arrangement. For example, an environmental impact bond could be used to fund biodiversity improvements that both sequester carbon and enhance land resilience. It could also be linked to employment outcomes to ensure the projects help grow permanent jobs.

The benefits to the Crown of taking this include increasing the ability to:

- mobilise capital to drive impactful change.
- innovate and let private capital take the risk, with the Crown securing long term benefits.
- obtain data from pilot projects that enable success to be scaled up nationally.
- avoid approaches that prove to be unsuccessful (learn from mistakes) with the benefit that private capital has funded it, rather than the Crown.

The above could be scoped and implemented through the business/government partnership structure mentioned in section 2.1.

### 4.3 Emissions pricing (questions 28-32)

Headline recommendation: Provide certainty on the projected price corridor for NZUs under the ETS by working with business to develop a shadow carbon price to inform investment decisions.

#### Emissions price paths to inform investment decisions

The discussion document states "the New Zealand Emissions Trading Scheme [ETS] needs a higher emissions price to drive investment and behaviour change to reduce gross emissions." It appears from the document that the Government has accepted the CCC's advice about the rising price corridor for New Zealand Units (NZU) under the ETS.

SBC presented that corridor in our CCC submission using the following chart which shows the current default auction reserve price and cost containment reserve price. This has been overlaid by the auction reserve price and cost containment reserve prices advocated by the Commission as follows:

- i. Increase the cost containment reserve trigger price to \$70 as soon as practical and then every year by at least 10% plus inflation.
- To maintain continuity with recent prices, immediately increase the auction reserve trigger price to
   \$30 as soon as practical, followed by annual increases of 5% plus inflation per year.



The carbon price that reflects the investment signals is shown in bold compared with the carbon price currently used in the economic modelling.

Figure 1. Current and proposed reserve auction prices and cost containment reserve prices

We agree, as the discussion document says, that achieving a high-value, resilient economy will require clear signalling of the low-emissions pathway. Understanding the likely price path for NZUs is key to that signal, and the ability of businesses to be able to plan. The Commission recommended changes to the cost containment reserve trigger price and the auction reserve trigger price in the ETS, as well as signalling the target-consistent long-term abatement cost values government and business should factor into policy and investment analysis.

We **recommend** that Government provide clarity on the likely future price corridor for NZUs under the NZ ETS and the major assumptions underpinning that work. We **recommend** Government work closely with the private sector to develop a shadow price of carbon which represents a realistic future price path that businesses can consistently and reliably factor into decision making.

#### Forestry should not delay gross emissions reductions

We agree that the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy.

However, we also recognise that forestry will play an important role in achieving the 2050 net-zero target, providing one of the most cost-effective ways to capture carbon over coming decades, and allowing other cost-effective technologies and methods enough time to be developed and made available. Examples of these technologies and methods could include methane inhibitors, as discussed in the agriculture section, and lower emissions sheep and beef genetics, particularly the use of genomics as well as a wide variety of other possibilities.

We **support** the Commission's recommendation to transition from a reliance on exotic forests to permanent native forests by 2050. The ETS provides little incentive for landowners to use native afforestation to capture carbon. At the same time, higher ETS prices would accentuate the additional value that landowners can get from exotic afforestation due to their significantly higher efficiency in capturing carbon compared to native afforestation.

We **recommend** that the ERP includes a specific action to investigate what policy measures would incentivise native plantings. Besides the ETS, incentivising native afforestation could bring other benefits, including ecosystem benefits such as improved biodiversity and water quality, where these benefits are likely to outweigh the costs. For example, pricing signals could be used alongside land use planning to enable councils to regulate carbon farming that would limit the conversion of productive land to permanent exotic forests.

Constraints on forestry within the ETS do need to be balanced with maintaining investor confidence. Many large emitters with ETS obligations have entered into long term investments to have a diversified portfolio approach to ETS compliance. Care needs to be taken not to shock the system and cause uncertainty in the ETS.

#### Role of voluntary carbon markets

Voluntary carbon markets (VCM) enable companies to invest in and purchase carbon credits from activities that reduce or remove CO<sub>2</sub> emissions as part of their climate strategies. To facilitate private sector climate action outside of the compliance market, VCM will need to scale rapidly, but with integrity. We **support** efforts to develop a high integrity voluntary carbon market for New Zealand to keep us aligned to international best practice and enable private sector entities to take credible and quantifiable climate action.

### 4.4 Planning (questions 33-35)

Headline recommendation: Consider the CCC's advice on planning through the RMA reform process.

We **support** consideration of the recommendations of the CCC in this area to enable emissions reductions through changes to urban form, function and development. We look forward to engaging in detail on the integration of climate considerations into planning decisions through the RMA reform process.

### 4.5 Research, science and innovation (questions 36-41)

**Headline recommendation**: Recycle ETS proceeds into research and innovation targeted specifically at emissions reductions and achieving an equitable transition.

Research, science and innovation will have a critical role in enabling the reduction of New Zealand's emissions, particularly in those areas where we do not have existing technology and approaches to meet the gap. We support the role of research, science, and innovation in helping us achieve an inclusive, sustainable and productive future.

In particular, we **recommend** proceeds from the ETS be used for emissions reduction innovation and R&D and for achieving an equitable transition. Potential uses include:
- Supporting development of the complementary measures to the Energy Efficiency and Conservation Authority's (EECA) Government Investment in Decarbonising Industry (GIDI) Fund mentioned in section 2.2.1 process heat;
- Introducing results-based procurement of financing to drive down emissions as mentioned in section 4.2 funding and finance, alongside investment crowded in from the private sector, or to expand application of the Green Investment Fund.
- Establishment of a national centre of excellence to drive innovation toward low emissions outcomes in New Zealand, administered by central government and modelled on successful public-climate innovation partnerships internationally, such as the Climate-KIC model used in Europe and Australia. The Climate KIC provides a hub for building networks of expertise, leveraging funding, developing capacity and catalysing innovation. The Climate KIC has supported the development of over 1,500 innovation solutions and secured nearly €1 billion of capital.<sup>23</sup> This modelled is being replicated regionally within New Zealand, such as via Auckland Unlimited's Climate Innovation Hub. We also point to the Ākina Foundation's recommendations in response to the ERP discussion document encouraging the Government to facilitate an innovation eco-system that supports climate focussed start-ups.

We would like to see government partner with industry to finance and drive innovation to respond to challenges that are too large to be absorbed or addressed by the private sector alone. We support a collaborative business/government mission-oriented approach to these grand challenges as detailed elsewhere in this response, for example section 2.5 (agriculture) in relation to research and development into biogenic methane and section 2.1.3 (freight transport) in relation to Sustainable Aviation Fuel, zero emissions aircraft and the role of green hydrogen in decarbonizing heavy freight.

#### Support for Climate Change Commission recommendations

In addition, we **support** the recommendations of the CCC to Government on accelerating the transition through innovation by:

- giving high priority to low-emissions research, development and innovation within public science and innovation funding approaches.
- introducing targeted measures to support low-emissions research, development and innovation.
- creating an enabling regulatory environment for new and emerging low-emissions industries and sectors, including removing barriers for Iwi/Māori to participate in these opportunities.

<sup>23</sup> https://www.climate-kic.org/

# 4.6 Behaviour change – empowering action (questions 42-44)

Headline recommendation: Deploy a marketing strategy similar to that developed for the COVID-19 response to drive behaviour change, building awareness and buy-in to the value of an equitable transition to a zero carbon, climate resilient society.

We support the CCC's recommendations in this area, being:

- Including behaviour change in the design of climate change policies and programmes, in order to enable New Zealanders to make choices that support low-emissions outcomes.
- Identifying a lead agency and establishing a dedicated, well-resourced fund for education and information to promote and socialise the wide-scale behaviour changes needed. This should involve communities, lwi/Māori and local knowledge.

We see government as having a critical role in supporting behaviour change to drive systems change. Price signals and policies will not change the behaviour of the entire population as much as is required to deliver the Commission's proposed pathway. There is also a risk that behaviour change during the transition lags the price signals and policy actions which may lead to a higher cost of the transition and a slower pace to meet the emission targets. EECA's Gen Less communications platform is a good example of a potential vehicle for this kind of messaging. We would like to see expanded Government education and public awareness initiatives to encourage behaviour change required to achieve the transition and ensure it is equitable (see section 3.3 – equitable transitions).

We, like many other submitters on the CCC's advice, see government's communications around COVID-19 as an example of a successful national effort to engage the public and address a problem, and wanted to see similar efforts to address climate change. We **recommend** Government deploy a marketing strategy to drive behaviour change, building awareness and buy-in to the value of an equitable transition to a zero carbon, climate resilient society.

We **recommend** the public sector unit we propose in section 4.1 (Government accountability and coordination (questions 21-23) oversee the development and deployment of this strategy. Part of this could include a stocktake of existing programmes for communicating around emissions reductions with New Zealanders (examples like GenLess) to ensure we build on and learn from what is already working (or not).

SBC/CLC members have valuable insights into consumer behaviour and tools to drive change. We would be willing to work with Government to develop this strategy.

#### Tools to assist with behaviour change

We support development of tools that can be used to help a wide range of businesses and consumers understand the emissions associated with different options that can help inform investment options. We note that these can often be business-led, such as the Sustainable Business Network's widely-used Climate Action Toolbox. We **recommend** the introduction of further policy tools to support supply-chain emissions management, such as:

- Support the development of methodological standards and create incentives for the calculation, exchange and display of environmental data, ensuring all types of stakeholder are considered
- Set guidelines for the production of environmentally responsible products (designed to last, reusable, minimal emissions associated with production). These guidelines should consider the role and importance of the circular economy.
- Provide investment in the research to achieve a successful digitalisation for a green economy.

These policy measures - together with industry collaboration - can help measure, manage and decarbonise scope 3 emissions, contributing to verifiable product-level emissions data.

# 4.7 Moving Aotearoa to a circular economy including bioeconomy (questions 45-51)

Headline recommendation: Develop a thriving, climate-resilient bioeconomy that reduces emissions through displacing fossil fuel-derived production materials and energy sources. The bioeconomy strategy should include the following specific measures:

- Support the development of biomass supply chains through developing a demand survey and a sequestration model to inform a biomass roadmap;
- Undertake a programme to identify solutions to supply the North Island gas network with renewable gases as part of a wider bioeconomy.

#### Circular economy

We **support** policy measures to move New Zealand to a circular economy. We point to the submissions made by our partner organisations Circularity and the Sustainable Business Network on this issue. In particular, we echo Circularity's four key steps required for the transition:

- i. Lead from the top with bold ambition, including learning from approaches large emitters and comparable economies have taken to the circular economy.
- ii. Define and communicate an Aotearoa specific narrative of the circular economy.
- iii. Build our knowledge and capability in the circular economy specifically for youth, Māori and New Zealand businesses.
- iv. Map, measure and track our progress to achieving circularity across our industries.

A number of SBC/CLC members are taking part in Circularity's XLabs programme to build awareness of how the circular economy can be practically applied at a business level; breakdown industry silos and enable system-wide collaboration required to unlock circular solutions; and build connections to help them move from linear to circular. We **recommend** Government investigate how models like XLabs could be replicated or scaled to enable a wider range of businesses to benefit from these programmes.

#### Bioeconomy

We strongly **support** the CCC's recommendation to develop and deliver a strategy for a thriving, climateresilient bioeconomy that reduces emissions through displacing fossil fuel-derived production materials and energy sources. We are pleased to see this reflected in the discussion document. The bioeconomy is embedded in the overarching concept of a "circular economy with a thriving bioeconomy". Whilst a bioeconomy is a facet of the circular economy, it will be a significant piece of work in its own right and deserves greater attention to detail.

We **recommend** much more comprehensive and accelerated work to map out and put in place enabling regulation for the New Zealand bioeconomy. Specific recommendations are set out below.



Figure 2: components of the New Zealand bioeconomy

We see the bioeconomy as being holistic, encompassing all facets of the economy. Figure 2 above outlines some of the key sectors and engagement points for interconnection between them. It is also important to recognise that parts of this bioeconomy are existing and are economic presently. Those orange waste streams (Forestry Waste and Slash, Organic Food and WWTP waste) are already used for renewable energy generation. The areas that are in blue (tallow, biocrude processing) represent the Z Biodiesel plant – which is operating though has significant room for growth. The items in yellow are those that have the most potential to accelerate decarbonisation, and to derive the most value from waste streams. This includes a number of energy sources, as well as alternative material creation paths represented collectively as biobased materials.

#### Recommendation: Support the development of biomass supply chains

Biomass energy, or bioenergy, is the energy from plants and plant-derived materials. We **recommend** that a nationwide survey is undertaken to ascertain current availability of sustainable biomass energy supply from woody and non-woody biomass through to waste oils and sustainable crop - and project the forward demand for biomass across individual regions. This will require engagement with industry to ensure it reflects their business and decarbonisation strategies.

In conjunction with this survey, we **recommend** that a nationwide sequestration model is developed. This will review current planting levels across the country to estimate current, and 10–20-year biomass availability and planned investment in infrastructure to support a sustainable biomass energy network; an ecological review; and a cost model, per hectare, for optimising planting to support land-owners choices and decision making for estimated biomass production and estimated carbon sequestration levels over the

next 50 years. This should include examination of potential impacts of expanding forest biomass harvesting on carbon sinks, biodiversity, water and air pollution.

The output from the demand survey and a sequestration model would have the potential to be used to develop a biomass roadmap. Many members have begun to investigate planting most beneficial to New Zealand's low carbon future (productive for biomass, sequestering native or exotic forest).

We estimate that this project will cost \$3 million over a three-year period. This work could form part of the SAF feasibility study (see section 2.1 - transport), though would need to have wider application.

## Recommendation: Undertake a programme to identify solutions to supply the North Island gas network with renewable gases as part of a wider bioeconomy

In the South Island, there is no easy centralised decarbonisation solution, relying on conversion towards electrification and biomass solutions for process heat. In the North Island, however, there is an existing gas network, and there is potential to convert the network instead of converting the end users.

There are a range of alternative gases that could be utilised in the existing North Island network, including hydrogen, biomethane and biogas, or pyrolysis gases. These gases could be blended within the existing network and the ratio increased over time as part of a coordinated, comprehensive transition plan. This could also be converted at a much lower capital cost to New Zealand—rather than procuring more than 100 new boilers and fuelling these boilers with new sources of wood or electricity, several significant green gas generation assets could be developed. Such an approach could have multiple benefits if it also assists with regional waste and reducing agricultural methane emissions.



Industry has sought to identify the scale of the opportunity, including work undertaken by Firstgas, Fonterra, and Beca in their "Unlocking NZ's Renewable Natural Gas Potential" document. We **recommend** that pilot plants are now developed (at least 10) across industry, landfill, and agriculture sites. Following this we propose that pilot plants are developed to prove technology scalability.

We estimate that the development of these pilot plants project will cost \$20 million and reduce carbon emissions by 20kT of emissions, equivalent to a 20-year carbon price of \$50/T.

There are a range of potential biogas plants that could be developed and implemented right now – these are represented in Figure 3 above as purple dots. We **recommend** the following projects for consideration:

- Example biogas generation sites at dairy farms of significant (>750 cows per shed) scale – five sites within proximity of significant (industrial) natural gas consumers. This will likely be in the Waikato region.
- Example biogas generation sites at smaller dairy farms – five sites within close proximity of each other to allow coordination of waste streams – likely in the Waikato region.
- Financial support to industry (meat and dairy processing specifically) to develop their own biogas plants, and export green methane into the gas network. Members of the CLC are planning biogas plants presently but will require financial support to address the capital cost hurdle.

#### CASE STUDY: MEMBER BIOECONOMY PROJECTS

CLC and SBC are actively collaborating on use of biotechnology and biomass.

One example spanning the network includes EECA, Transpower, Orion and DETA working alongside electricity distribution businesses (EDBs) to develop a regional heat database, with the intent of linking demand for renewable fuels, with future fuel suppliers. This collaborative approach involves engaging with all process heat users across New Zealand with a heating plant of more than 0.5MW and aggregating their transition pathway across regions.

Other members have focussed on biomass as part of their process heat transition plans. As of October 2021, DB's Timaru brewery has steam requirements met from 100% biomass (wood) through their local steam supplier Pioneer. DB hope the switch will help them achieve a 32% reduction in their carbon footprint by the end of 2022. Sanford has also made the move away from a coal fuel source to the alternative of woodchip biomass at its Timaru fishmeal plant boiler, a move resulting in a 50% emissions reduction for the boiler.

Further North, Ports of Auckland are trialling the option of biofuels, having imported biodiesel from Neste, a Singaporean refinery, to trial in their straddle carriers which are a significant source of their emissions. Biodiesel is currently being imported by fellow CLC and SBC member Z Energy, who following their own trials and research, now have confidence the fuel option delivers as expected with a market to distribute it to.

These efforts highlight the need for a connected New Zealand bioeconomy.

### About Sustainable Business Council

The Sustainable Business Council (SBC) is a CEO-led membership organisation with over 100 businesses from all sectors, ambitious for a sustainable Aotearoa. Members represent more than \$87 billion of collective turnover, 28 per cent of GDP, and nearly 160,000 full-time jobs. Our network gives members the ability to take large-scale collective action. SBC is part of the BusinessNZ network and is the New Zealand Global Network partner to the World Business Council for Sustainable Development. www.sbc.org.nz/about/our-members/sbc-members

### About Climate Leaders Coalition

The Climate Leaders Coalition (CLC) was launched in July 2018 with 60 original signatories to promote business leadership and collective action on climate change. With now over 100 signatories, they account for almost 60 per cent of New Zealand's gross emissions, around \$86 billion of collective turnover, and employ almost 200,000 people. Signatory commitments include measuring and publicly reporting their greenhouse gas emissions, setting a public emissions reduction target, and working with suppliers to reduce their emissions. <u>www.climateleaderscoalition.org.nz/who</u>

## **Appendix: full list of recommendations**

| TRANSITIONING KEY SECTORS  |   |
|--|---|
|  |   |
| Cars and light vehicles  |   |
| 1. The target of reducing VKT by cars<br>and light vehicles by 20% by 2035 | We <b>recommend</b> Government clarify if this target is absolute or per capita.  |
| 2. National public transport network                                       | <ul> <li>We support the development of a national public transport network to reduce travel by private vehicles and to increase walking, cycling, low-emissions public and shared transport.</li> </ul>   |
|  | We recommend Government articulate a clear, systems-level approach to a strategy for our future mobility.   |
|  | <ul> <li>Specifically, we recommend that the individual policies floated in the ERP discussion document be considered in a more<br/>holistic way.</li> </ul>  |
|  | <ul> <li>We also recommend that the development of the network strategy be accelerated.</li> </ul>  |
|  | <ul> <li>As part of the network strategy, we strongly recommend investigating the potential for public transport, walking and cycling in rural and provincial areas, and we would like to see more urgency placed on this action.</li> </ul>                                |
|  | <ul> <li>We recommend that central Government articulate high-level principles and design for the network, with detailed<br/>implementation and accountability to sit with local and regional councils.</li> </ul>  |
|  | We also recommend the scope of the network strategy consider:   |
|  | <ul> <li>An infrastructure plan, with clear timelines over which lower-carbon and affordable transport options are<br/>introduced to enable businesses to plan for the transition, especially where delivery times are important.</li> </ul>                                |
|  | <ul> <li>Mode-shift plans for inter-regional travel. Currently, the discussion document refers to the implementation of mode-shift plan in urban areas. We recommend that inter-regional mode-shift opportunities should also be considered in the first budget.</li> </ul> |
|  | <ul> <li>We support an integrated land-use, urban development and transport planning and investments to reduce transport<br/>emissions.</li> </ul>  |
|  | • We strongly support an action on investing for a better understanding of travel accessibility, preferences and behaviour.   |

| 3. Transport pricing system                                 | We generally <b>support</b> improving how transport choices are priced.  |
|---|--|
|   | • We <b>recommend</b> Government provide clarity around the potential impacts of a congestion charge on transport modes that do not have alternative routes, e.g. the impact of the proposed Auckland congestion charge on heavy road transport.   |
|   | <ul> <li>We recommend that the design of a congestion charge acknowledges the de-carbonisation effort being undertaken by<br/>New Zealand's heavy freight industry and consider exemptions from such charging over transport corridors for which<br/>alternative routes are not feasible</li> </ul>  |
|   | • We <b>recommend</b> that an explicit consideration be given to how the road infrastructure funding source can be future-<br>proofed.   |
|   | • We <b>recommend</b> as few exemptions as possible for the system to operate efficiently and deliver the desired outcomes.  |
|   | • We <b>recommend</b> that Government integrate this work into the current project <i>Future of the Revenue System</i> .   |
| 4. Target and actions to increase the                       | We recommend:  |
| number of zero-emissions vehicles                           | <ul> <li>Government conduct and publish analysis of how the zero emissions target could impact different parts of the society,<br/>especially when interacting with other policy instruments that affect transport choices (e.g. a congestion charge).</li> </ul>  |
|   | • That the long-term focus of the target should remain reducing the emissions footprint of the fleet through a mix of policy interventions that avoid marginalising parts of the society.  |
| 5. Full utilisation of Clean Car Sector<br>Leadership Group | We <b>recommend</b> accelerating and expanding the work of the Clean Car Sector Leadership Group to realise its full potential to develop practical solutions to overcome the key barriers to uptake of low-emissions vehicles in New Zealand. The group should focus its efforts on, and be resourced to develop practical solutions to, timing and structure of an ICE phase out; charging infrastructure (see below); and equity – access and affordability |
| 6. Charging infrastructure                                  | We recommend:  |
|   | • That scoping of a national EV infrastructure plan be accelerated with a view to commencing implementation by early 2023 at the latest.   |
|   | • The introduction of expanded support for co-investment for EV charging infrastructure to incentivise an accelerated rollout of infrastructure, as introduced through EECA's Low Emission Transport Fund.   |
|   | • That the ERP considers the value of smart EV charging and smart EV integration within the wider electricity system, and not restricted to heavy truck use only.  |
| 7. Role of business in accelerating fleet                   | We recommend:  |
| transformation  | • That Government includes a specific action to consider the possible short-term impacts on businesses as they transform their fleet to lower-carbon assets.   |
|   | That investigation of tax incentives be accelerated with clear outcomes within the first budget. Removing current barriers     will help smooth the pathway to electrification of corporate fleets   |

|   | <ul> <li>That WorkSafe guidelines requiring employer owned EVs to be charged in a garage be changed or modified to make it more practical and incentivise employer EV uptake, and that this work be undertaken as a matter of urgency.</li> <li>That Government consider extending the Clean Car Discount threshold to cover light commercial vans, in order to reduce the total cost of ownership of these vehicles, and thereby support BEV uptake across the commercial fleet.</li> </ul>   |
|---|--|
| 8. Vehicle scrappage scheme   | <ul> <li>We recommend:</li> <li>Government consider if targeted cash incentives could be provided for scrappage, or for low-income households to trade older vehicles and purchase more fuel-efficient cars.</li> <li>Government considers measures to reduce the amount of vehicles that may need to be scrapped, for example investigation of retrofit of ICE engines or viability of drop in synthetics and biofuels where technically and commercially viable technologies for converting engines of fossil fuel cars to EV engines and subsidise and scale them up.</li> </ul>  |
| 9. Complementary measures   | We <b>recommend</b> that Government considers complementary measures aimed at getting older vehicles off the road.   |
| Targets and actions for freight transport   |  |
| 10. The targets of reducing emissions<br>from freight transport by 25% by<br>2035, and reducing emissions<br>intensity of transport fuels by 15% by<br>2035 | We <b>recommend</b> Government investigate whether a more ambitious target for freight transport than the ERP discussion document suggests could be adopted by implementing the measures recommended in the SBC Low Carbon Freight Pathway as set out in this section.   |
| 11. Supporting uptake of low-carbon fuels   | We <b>recommend</b> for a more targeted approach in identifying and removing barriers to the uptake of low-carbon fuels than covered in the discussion document not just for trucks but also for other modes of transport.   |
|   | <ul> <li>We recommend that Government:</li> <li>Invests in gathering the evidence on the expected demand for biofuels and hydrogen through to 2050 from different sectors, and on the demand for electricity required to support the domestic production of green hydrogen. As mentioned previously, the electricity sector needs to be involved in designing and following through on the transport sector's transition.</li> <li>Provides targeted support and an enabling regulatory framework to incentivise innovation and commercial production of:</li> <li>Domestic biofuel, including sustainable aviation and shipping fuels.</li> <li>Green hydrogen as an alternative to decarbonise aviation and heavy transport (to complement and build on existing work done in this area, including through Ara Ake.</li> </ul> |

| 12. Biofuels                          | We <b>support</b> the introduction of a biofuel mandate, and the consideration to support to domestic production of biofuels, however, due to limited feedstock supply, we <b>recommend</b> that the mandate should be first targeted to the parts of the transport sector that are hardest to de-carbonise, i.e. heavy freight and aviation.   |
|---------------------------------------|---|
|                                       | We recommend:   |
|                                       | <ul> <li>That the domestic production of biofuels is placed within a broader bioeconomy strategy for Aotearoa. The bioeconomy and biofuels strategies must be integrated, recognising other uses of biomass feedstock in the economy, and the trade- offs amongst supply-chain investment decisions that will need to be made. The issue of biofuel supply is particularly relevant for aviation, where alternative options to decarbonise are not available</li> </ul> |
|                                       | • We <b>recommend</b> that complementary analysis also be undertaken with regards to the end-to-end supply chain of biofuels, particularly if these are domestically produced.  |
| 13. Freight and Supply Chain Strategy | We <b>recommend</b> that the potential emissions reductions measures in MoT's <i>Hīkina</i> discussion document be explicitly considered in developing the Strategy. Including:   |
|                                       | <ul> <li>Optimising freight routes, logistic nodes, equipment and vehicles: SBC Freight Group is already planning on doing this<br/>through exploring collaborations aimed at optimising freight routes.</li> </ul>   |
|                                       | <ul> <li>Examine opportunities for the collection and better use of data to improve efficiencies in the freight system. Subject to competition law considerations, SBC Freight Group could play a role the effective data gathering and use of data to improve efficiencies in the freight system. We would welcome the chance to discuss this matter further.</li> </ul>   |
|                                       | <ul> <li>Consider encouraging/supporting voluntary business collaborations to reduce emissions in logistics – the Freight Group is already doing this and seeking to promote more cross-industry collaboration through expanding the Pathway membership.</li> </ul>   |
|                                       | As well as the above, we recommend that the Strategy:   |
|                                       | <ul> <li>Explores consumer behaviour that promotes modal shift, this being one of the Freight Group's implementation channels.</li> <li>We look forward to engaging on this in more detail through the Freight and Supply Chain Strategy.</li> </ul>  |
|                                       | <ul> <li>Specifically mention the roles of biodiesel, sustainable aviation fuel, green hydrogen, and BEVs in the freight sector<br/>transition.</li> </ul>  |
|                                       | • Be underpinned by evidence on the demand for mode shift to rail or coastal shipping, and the capacity available to meet that demand.  |
|                                       | Clearly articulate the vision on how different transport modes can integrate across different routes, identifying barriers     and highlighting opportunities.  |
| 14. Aviation                          | We <b>recommend</b> investigation of a specific biofuel mandate for SAF and Government support for domestic production as two of many possible policies that could be used to close the gap between SAF and fossil fuels.   |

|                                      | We <b>recommend</b> the SAF mandate to start at 2.5% in 2025, rising to 13.5% and 50% in 2035 and 2050 respectively.<br>We generally <b>support</b> the introduction of a biofuels mandate applying to SAF. However, the current proposal for a biofuels<br>mandate for Aotearoa would not facilitate SAF supply in Aotearoa. A SAF-specific mandate applying to <u>all</u> fuels (including fuel<br>uplifted for use on international flights) is required.  |
|--------------------------------------|---|
|                                      | <ul> <li>We recommend the following to facilitate aviation decarbonisation:</li> <li>Identify and prepare for the infrastructure and energy requirements of zero emissions aircraft. To operate these planes in the third budget period as we plan, research and investment in this infrastructure needs to start now.</li> <li>Review the objectives of the air traffic management system to, after safety, optimise for carbon reduction.</li> </ul>  |
|                                      | We <b>recommend</b> exploring the scope for operational improvements at airports: developing fuel-saving flight paths (in conjunction with Airways New Zealand) and the allocation of taxiways to minimise aircraft taxi time.  |
| 15. Rail and marine                  | We <b>recommend</b> that the ERP includes a specific action for identifying barriers to mode-shift, which would then inform the National Freight and Supply Chain Strategy.   |
|                                      | <ul> <li>We recommend:</li> <li>That the National Freight and Supply Chain Strategy clearly articulates the investments required in rail and coastal shipping to deliver the desired mode-shift outcomes.</li> <li>That realistic mode-shift targets be considered.</li> <li>That the ERP also actions the Commission's advice to introduce a target/mandate for renewable fuels for ships with policy level guidance and recommendations to support the domestic production, distribution and supply for those alternative fuels.</li> <li>Closer examination of the role of shipping, including international shipping, in reducing New Zealand's transport amissions and supply for the support of the ERP.</li> </ul> |
| 16. Complementary measures           | <ul> <li>We recommend:</li> <li>That the opportunity for domestic refurbishment of high-emitting trucks is explicitly considered in the ERP.</li> <li>Government reviews restrictions/requirements (e.g., length restrictions) on the type of heavy vehicles that can be bought into New Zealand.</li> </ul>  |
| 17. Time limit on ICE light vehicles | We <b>recommend</b> the time limit on new ICE light vehicles is structured taking into account the range of factors that will contribute<br>to EV uptake in Aotearoa (including supply, charging infrastructure, and incentives), as well as policies restricting ICE import or<br>manufacture in New Zealand's major trading partners  |

| Торіс            | Recommendation   |
|------------------|--|
| 18. Process heat | We <b>recommend</b> developing complementary measures to the Government Investment in Decarbonising Industry (GIDI) fund that support a wider range of companies to decarbonise:   |
|                  | <ul> <li>Develop complementary measures to the Government Investment in Decarbonising Industry (GIDI) fund that support a wider range of companies to decarbonise: a bespoke solution for process heat conversions amongst the largest users and a smaller fund for SME process heat users.</li> </ul>   |
|                  | <ul> <li>Establish a mechanism for Government to underwrite long-term fuel costs to de-risk and incentivise investment in<br/>electrification.</li> </ul>  |
|                  | <ul> <li>Prohibit the development of new fossil fuel consuming process heat plants.</li> </ul>   |
|                  | Specifically we recommend Government:  |
|                  | <ul> <li>Provide clarity on future rounds of GIDI (for example, it is not currently clear whether there is funding after GIDI round<br/>three).</li> </ul>   |
|                  | <ul> <li>Directly engage with large users (e.g. top 20 in New Zealand) with a view to targeting GIDI at their transitions. The key reason for this is that the large users represent more than 40 per cent of the available capacity. Converting these users to bioenergy is not necessarily the best use of biomass fuel and will likely require a customised solution to help decarbonise. They may also make the most tangible carbon reductions across New Zealand.</li> </ul> |
|                  | <ul> <li>Establish a second fund to assist smaller users with a less stringent criteria around engagement.</li> </ul>  |
|                  | <ul> <li>Establish a mechanism to underwrite long-term fuel costs to de-risk and incentivise investment in electrification. This could be in the form of specific bridging support in the event of electricity price spikes for decarbonised businesses for a period of 10 years, to cover for periods of high energy cost and give confidence in the long-term performance of the energy market</li> </ul>  |
|                  | We recommend Government prohibit the development of new fossil fuel consuming process heat plants. Specifically:   |
|                  | <ul> <li>Prohibit the installation of any new coal boilers for stationary process heating energy.</li> </ul>   |
|                  | <ul> <li>Develop a transition plan in conjunction with Government and Industry to phase out the operation of all process heat<br/>fossil fuel boilers operating in New Zealand by 2050.</li> </ul>   |
|                  | We <b>recommend</b> Government is clearer and stronger in its messaging that this is a significant area for quick, lasting decarbonisation, and this should be a key area for current Government investment.   |

| 19. Renewable energy consumption target            | We <b>recommend</b> that Government adopt a 50 per cent renewable energy consumption target by 2035 (as recommended by the CCC).  |
|--|---|
|  | We also <b>support</b> an aspirational target for renewable electricity and agree with the CCC's position which is that the last few percentage points are too expensive to pursue and that government and business would reduce emissions faster (and more affordably) if Government prioritise other, more carbon-intensive emitters (transport, process heat), over investment in 100 per cent electricity generation. |
|  | We <b>agree</b> with the CCC that the overall path to net zero carbon should deploy the least cost abatement options first.   |
| 20. An energy strategy for the whole energy system | We <b>support</b> the CCC's recommendation to develop a long-term national energy strategy that provides clear objectives and a predictable pathway away from fossil fuels and towards low-emissions fuels, and the infrastructure to support delivery. We <b>agree</b> that this strategy is central to New Zealand's low carbon future.   |
|  | We <b>recommend</b> framing of the strategy for the energy system in the ERP provides greater specificity about what needs to be included within the energy strategy to help Government to act quickly and decisively. This should include:   |
|  | A terms of reference of the strategy is developed and included in the final ERP.  |
|  | <ul> <li>Government engage with future customers of large quantities of bioenergy and green hydrogen (industrial sector<br/>(particularly process heat) and the transport sector (particularly aviation) to ensure future demand scenarios are<br/>appropriate.</li> </ul>  |
|  | <ul> <li>Clarity is provided on who 'owns' the energy strategy and the electricity-specific strategy, and by when the strategy will<br/>be drafted.</li> </ul>  |
|  | • This strategy is owned by the Minister of Energy and Resources and that there is a commitment made to have this ready for public consultation in 2022   |
|  | We <b>recommend</b> that the following also forms part of the long-term energy strategy:  |
|  | <ul> <li>Amendments to existing policy architecture to allow an accelerated transition, including ensuring the Commerce<br/>Commission's price pathway methodology does not hold up urgent additional investment for electrification of innovation<br/>in deployment of distributed energy resources (DER) for system management.</li> </ul>  |
|  | • The interplay of varying fuel types (electricity, biomass, natural gas, biogas, hydrogen) through the transition.   |
|  | <ul> <li>Assessing the role of demand side management especially in electricity and incorporating the place of energy efficiency<br/>and new technology to better manage both supply-side and demand-side energy consumption. Ensure regulation is not<br/>a barrier.</li> </ul>  |
|  | <ul> <li>Clarifying the place of New Zealand's Energy Certificate System, and the effect of its carbon footprint on the wider<br/>electricity sector.</li> </ul>  |

|  | <ul> <li>Investigation of whether policy measures could incentivise the uptake of solar photovoltaic panels in New Zealand. Accommodating a distributed generation model within the existing system will support management of supply and demand, increase resilience and ease the burden on energy sector capital investment.</li> <li>Building on work already being done in this area, most notably The Aotearoa Circle's Energy Strategy.</li> <li>Considered through an equitable transition lens, including measures to address the 'energy trilemma' of affordability, security and sustainability. We point to the Business Energy council's New Zealand Energy Scenarios – TIMES-NZ 2.0 as useful a tool to aid decision-making on future energy supply and the range of associated trade-offs.</li> </ul>   |
|--|---|
| 21. Removing regulatory barriers   | We <b>recommend</b> Government assure itself that regulators are taking every step it can to remove any barriers to investments that would facilitate emissions reductions. Specifically:   |
|  | • The Electricity Authority follows through on this strategic intent and implement the recommendations of the Innovation and Participation Advisory Group under the Equal Access work stream.   |
|  | <ul> <li>The Commerce Commission actively reflect government policy and intent on greenhouse gas emissions while upholding its statutory remit. Steps would include prioritising work and making decisions that reflect the contribution the electricity system must inevitably make to the decarbonisation agenda.</li> </ul>  |
|  |   |
| 22. Adaptation of electricity regulation                                   | We recommend:   |
| 22. Adaptation of electricity regulation                                   | <ul><li>We recommend:</li><li>Electricity regulation (Part 4 of the Commerce Act) be adapted for a low-emissions future.</li></ul>  |
| 22. Adaptation of electricity regulation                                   | <ul> <li>We recommend:</li> <li>Electricity regulation (Part 4 of the Commerce Act) be adapted for a low-emissions future.</li> <li>A broader view of the impacts of the institutional arrangements on the sector/energy system is given.</li> </ul>  |
| 22. Adaptation of electricity regulation                                   | <ul> <li>We recommend:</li> <li>Electricity regulation (Part 4 of the Commerce Act) be adapted for a low-emissions future.</li> <li>A broader view of the impacts of the institutional arrangements on the sector/energy system is given.</li> <li>Further clarity is provided on whether elements of all the existing institutional arrangements for energy are set up to encourage (and not impede) developments around the energy needs of zero emissions aircrafts (electric, hybrid, and hydrogen aircraft).</li> </ul>  |
| 22. Adaptation of electricity regulation<br>23. The role of green hydrogen | <ul> <li>We recommend: <ul> <li>Electricity regulation (Part 4 of the Commerce Act) be adapted for a low-emissions future.</li> <li>A broader view of the impacts of the institutional arrangements on the sector/energy system is given.</li> <li>Further clarity is provided on whether elements of all the existing institutional arrangements for energy are set up to encourage (and not impede) developments around the energy needs of zero emissions aircrafts (electric, hybrid, and hydrogen aircraft).</li> </ul> </li> <li>We recommend Government recognise that the two most promising alternatives to fossil fuel energy and electricity for hard to abate sectors are biofuels/biogas and green hydrogen. With respect to green hydrogen, we recommend:</li> </ul>  |
| 22. Adaptation of electricity regulation<br>23. The role of green hydrogen | <ul> <li>We recommend: <ul> <li>Electricity regulation (Part 4 of the Commerce Act) be adapted for a low-emissions future.</li> <li>A broader view of the impacts of the institutional arrangements on the sector/energy system is given.</li> <li>Further clarity is provided on whether elements of all the existing institutional arrangements for energy are set up to encourage (and not impede) developments around the energy needs of zero emissions aircrafts (electric, hybrid, and hydrogen aircraft).</li> </ul> </li> <li>We recommend Government recognise that the two most promising alternatives to fossil fuel energy and electricity for hard to abate sectors are biofuels/biogas and green hydrogen. With respect to green hydrogen, we recommend: <ul> <li>Greater emphasis on the potential role of green hydrogen as a low-carbon fuel in the ERP, in particular incentivisation of measures to encourage research and innovation to explore green hydrogen's potential given the scope above.</li> </ul></li></ul> |

| Торіс                 | Recommendation   |
|-----------------------|--|
| 24. Built environment | We recommend:  |
|                       | <ul> <li>The Warmer Kiwi Homes programme is expanded to cover an additional 200,000 homes and additional energy users<br/>(such as LED lighting).</li> </ul>   |
|                       | <ul> <li>That Government subsidises the uptake of electrical heating systems in homes through heat pump support, specifically<br/>to eliminate gas as a residential heating source.</li> </ul>   |
|                       | That Government creates an Energy Performance Certificate (EPC) policy.  |
|                       | We recommend that Government makes specific recommendations to address embodied emissions. We recommend:   |
|                       | Embodied emissions are included in the following three areas:  |
|                       | <ul> <li>where buildings demand lower carbon concrete, steel, aluminium and aggregate, it will help change the<br/>manufacture and sourcing of products and reduce industrial heat emissions.</li> </ul>   |
|                       | <ul> <li>where manufacturing building materials are saying that they need demand, in order to invest.</li> </ul>   |
|                       | <ul> <li>within the Carbon Neutral Government Program for all new projects (those commencing design after January<br/>2023).</li> </ul>  |
|                       | <ul> <li>Setting 'baseline' carbon caps for new developments on a m<sup>2</sup> basis is adopted by 2024 – new buildings that are underway today will be here well beyond 2050, so we cannot wait to implement this change.</li> </ul>   |
|                       | <ul> <li>Government considers the ability to change the carbon conversation from a production perspective to a consumption<br/>one.</li> </ul>   |
|                       | <ul> <li>Government considers incentivising the use of local materials to reduce transport-related emissions.</li> </ul>   |
|                       | We recommend:  |
|                       | <ul> <li>NABERSNZ ratings are mandated for all existing office buildings, hospitals, hotels, and retail buildings by June 2023.</li> </ul>   |
|                       | <ul> <li>Government undertake analysis on the total cost of NABERSNZ implementation, offers a \$2,500 incentive on the initial assessment for the first 500 buildings to speed up the uptake of NABERSNZ ratings, and consider a joint funding approach with the private sector to support the ongoing implementation of the scheme</li> </ul> |
|                       | <ul> <li>Government amends their energy efficiency for new builds target to 30 per cent more energy efficient by 2024, 60 per<br/>cent more energy efficient by 2027, and near zero energy by 2030.</li> </ul>   |
|                       | We recommend that Government reflects following four initiatives in the ERP to proactively future proof new builds:  |
|                       | <ul> <li>Link the design of buildings with transport mode shift, including the expected uptake of EVS. Charging, parking, electricity fitouts should factor in the behaviour and needs of future EV owners.</li> </ul>   |

|   | <ul> <li>As above, buildings should be designed with future home energy management systems (HEMS) in mind. This is the idea that in future network businesses and energy retailers would be able to offer optimisation of roof top solar, batteries, remote management of appliances for either domestic economic optimisation or grid/energy support.</li> <li>Design out dependence on fossil fuel space and water heating now.</li> <li>Factor in the co-benefits of warm dry homes with emissions reductions into minimum building standards</li> <li>We recommend that energy efficiency is the first priority in all of these initiatives. For example</li> <li>Government is clearer in its recommendations regarding energy efficiency.</li> <li>Government includes a range of initiatives as part of a comprehensive energy equity programme. The following are tried and tested in New Zealand and/or overseas and can be implemented relatively quickly: <ul> <li>The Warmer Kiwi Homes programme should be applied on a wider scale, noting health co-benefits.</li> <li>Introduce energy labels for homes.</li> <li>Introduce energy labels for commercial office buildings</li> </ul> </li> </ul> |
|---|--|
| Agriculture   |  |
| Торіс   | Recommendation   |
| 25. Research and development into the<br>rumen with the preeminent goal of<br>reducing biological methane<br>emissions in agriculture | <ul> <li>We recommend that Government create an accelerated pathway for the development and adoption of biogenetic methane emissions reduction technologies. This should involve scaling up public and private funding and lifting the urgency of public and private sector co-operation to invest in a strategic, structured, and long-term commercial orientated approach to reducing biogenic methane emissions. Specifically:</li> <li>Government double funding from \$25m/year to \$50m/year from 2022 and increase total funding further to more than \$100m/year from both government and business by 2025.</li> <li>The delivery and governance arrangement should be focused on the ultimate delivery of products that reduce methane emissions with the benefits of the resulting coming back to the NZ primary sector.</li> <li>The domestic public and private R&amp;D spend would be in addition to revenue derived from a government pricing mechanism (once this is introduced), and until new technologies are brought into the market.</li> <li>We recommend Government pursue a much more ambitious biogenic methane emissions reductions pathway than 24 per cent</li> </ul>                 |
| 26. Recycling agricultural emissions  | by 2050 by significantly accelerating our research into methane mitigation technologies around an international commercialisation model.<br>We <b>recommend</b> that Government work with the Primary Industry to consider how research and development should be advanced to reduce nitrous oxide emissions.<br>We <b>recommend</b> that any revenue produced from a pricing mechanism for agricultural emissions under HWEN should be  |

| 27. A long-term agricultural aspiration   | We <b>recommend</b> that Government in partnership with Primary Industry develop a long-term aspiration strategy for New Zealand agriculture.   |
|---|---|
| 28. Encouraging uptake of on-<br>farm mitigation practices ahead of<br>implementing a pricing mechanism<br>for agricultural emissions | We <b>recommend</b> on-farm mitigation practices are clarified and defined.   |
| 29. Reducing barriers to changing land<br>use to lower emissions farming<br>systems and products                                      | We <b>recommend</b> that a coherent forestry strategy is established that addresses the ongoing need to offset carbon emissions, and balances between exotics and natives and the need for the development of an accompanying bioeconomy.   |
| Waste   |   |
| Торіс   | Recommendation  |
| 30. Waste reduction target  | We recommend adopting a target to reduce waste biogenic methane emissions by 40 per cent by 2035.   |
| 31. Education and behaviour change  | We support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste.   |
| 32. Extension to uncontrolled activities  | We <b>agree</b> the proposals outlined in the discussion document should also extend to uncontrolled activities, such as, farm dumps, open burning and unmanaged disposal sites given the long history of reductions from managed disposal sites.   |
| 33. Intersection between waste and the bioeconomy   | <ul> <li>We recommend that Government investigates how the waste sector fits into the bioeconomy and what should be occurring with what waste, where, in order to provide the least cost solution for New Zealand overall. Items to consider include:</li> <li>Sources of different types of waste.</li> <li>Whether there are thermal/electrical loads around high waste areas.</li> <li>Whether should compost be prioritised over other organic disposal methods.</li> <li>Whether should anaerobic digestion be prioritised over other organic disposal methods.</li> <li>Whether AD/pyrolysis be utilised to provide inputs into energy systems, including: <ul> <li>Local energy hubs for large industries.</li> <li>Liquid fuel consumption market, including petrol, diesel and LPG.</li> </ul> </li> </ul> |

| F-gases   | F-gases  |  |
|---|--|--|
| Торіс   | Recommendation   |  |
| 34. Phase down of the bulk import of<br>HFCs required under the Kigali<br>Amendment and restricting the<br>import or sale of finished products<br>that contain high-global warming<br>potential HFCs, where alternatives<br>are available | <ul> <li>We support the CCC's recommendation that emissions from fluorinated gases must be reduced and recommend that:</li> <li>Government provides financial assistance for the purchase of equipment required to service and maintain HC equipment safely given it is a flammable gas during the phase down the bulk import of HFCs.</li> <li>Government provides subsidies and rebates like they do for cars and heat pumps.</li> </ul> |  |
| 35. Restricting the import or sale of finished products that contain high   | We generally <b>support</b> restricting the import or sale of finished products that contain high-global warming potential HFCs to the extent that there are alternatives available that can be safely serviced and maintained.  |  |
| global warming potential HFCs   | We <b>support</b> utilising lower global warming potential refrigerants in servicing existing equipment providing the practice is compliant.   |  |
| 36. Phasing of GWP limits and new technology  | We <b>recommend</b> that Government work with the private sector to revise the proposed timelines and GWP limits on certain application categories to reflect the varying size and scale of our members' operations.   |  |
|   | During the phasing in of the new technology described we <b>recommend</b> that the Government consider the following ways to support the acceleration of refrigerant emissions reductions:   |  |
|   | <ul> <li>listing refrigerant technicians as a skills shortage to grow and relieve a pressured and small group of technicians currently<br/>servicing the industry;</li> </ul>  |  |
|   | subsidisation or rebate schemes for replacement of legacy systems with equivalent lower GWP systems;   |  |
|   | improved leak tightness;   |  |
|   | <ul> <li>reduce the amount of refrigerants used in equipment; and</li> </ul>   |  |
|   | putting in preventative maintenance programmes.  |  |
| 37. Other ways of reducing refrigerant emissions  | We also <b>recommend</b> that Government consider natural refrigerants, which are available already (R774 and R290) and commonly used, as alternatives to HFC refrigerants that New Zealand could utilise (noting that additional training and risk management may be required, particularly for R290 given it is a flammable refrigerant).  |  |

|  | We <b>recommend</b> that Government provide funding for facilities that are looking to upgrade their facilities to lower GWP gases.<br>EECA is providing significant funding and support for industrial processes to transition away from fossil fuel use through the GIDI   |
|--|--|
| Ferrette   | Competitive Fund. This fund could be extended to include upgrades for F-gases.   |
| Forestry   |  |
| Торіс  | Recommendation   |
| 38. Forestry   | <ul> <li>We recommend:</li> <li>The inclusion in the ERP a specific action to investigate what policy actions would encourage native plantings and balance the agricultural sectors on going requirement for land with the case for forestation.</li> <li>Government investigate what policy actions would encourage native plantings whilst recognising the role that exotic</li> </ul> |
|  | forestry will play in our transition.  |
| MEETING THE NET ZERO CHALLENGE   |  |
| Transition pathway   |  |
| Topic  | Recommendation   |
| 39. Business-government collaboration  | We <b>recommend</b> Government establish:  |
|  | <ul> <li>A Climate Advisory Group to advise the Climate Change Response Ministers Group comprising business and other<br/>leaders from across the economy as the current ERP is developed and implemented.</li> </ul>  |
|  | <ul> <li>A regular forum between Chief Executives from the public and private sectors on finalisation and implementation of the<br/>ERP. For example, SBC would be very happy to facilitate regular discussions between the public sector's Climate Change<br/>CE Board and Chief Executives from across our membership.</li> </ul>  |
|  | <ul> <li>Sector-specific collaborations between government and business to respond to individual decarbonisation challenges.</li> <li>There are some areas where there are natural forums or formats for these collaborations, and others where innovative approaches might need to be explored.</li> </ul>  |
| 40. New principle – close collaboration<br>between business and government<br>to develop and implement the ERP | We <b>recommend</b> , as the CCC recommended, the addition of a principle relating to working in partnership with business.<br>We <b>recommend</b> that Government partner with business to allow for the co-development of solutions.   |
| 41.A path that is clear, ambitious and affordable  | We <b>recommend</b> the principle (that our transition path should be clear, ambitious and affordable) be augmented with the addition of the need for a pathway that is also credible.   |

| 42. The role of nature-based solutions  | We support investigation of mitigation co-benefits through nature-based solutions including, for example, blue carbon, and recommend more clarity be provided on enabling measures and mechanisms that will be put in place.  |
|---|---|
| Working with our Te Tiriti partners     |   |
| Topic                                   | Recommendation  |
| 43. Working with our Te Tiriti partners | We <b>support</b> a genuine, active, and enduring partnership with iwi/Māori, including iwi/Māori business, as reflected in our submission to the CCC.  |
|   | We also <b>support</b> Government working in partnership with Iwi/Māori and local government to ensure that the principles of Te Tiriti o Waitangi are embedded in this (and subsequent) emissions reduction plan(s).   |
| Making an equitable transition          |   |
| Торіс                                   | Recommendation  |
| 44. Making an equitable transition      | We recommend Government   |
|   | <ul> <li>Develop a Terms of Reference to underpin an Equitable Transitions Strategy as part of the final ERP. This should include<br/>the key features of the Strategy, as well as process and timeline for its development.</li> </ul>                                 |
|   | <ul> <li>Work in partnership with business and other social partners to develop an Equitable Transitions Strategy that includes a concrete articulation of the future that New Zealand is working toward and the policies that will support us to get there.</li> </ul> |
| 45. Terms of Reference for an Equitable | We recommend the final ERP contain a Terms of Reference for the Equitable Transitions Strategy. The Terms of Reference should:  |
| Transitions Strategy                    | 2. Commission economic and social analysis to inform the development of the Strategy and ensure New Zealanders understand which sectors will be most impacted by the transition.  |
|   | 3. Articulate how the Strategy will be developed in partnership with Iwi/Māori.   |
|   | 4. Describe at a high level the process for development of the Strategy.  |
|   | 5. Provide for the following critical components of the Strategy:   |
|   | <ul> <li>Adapting the education system to equip New Zealanders with the skills needed for a low emissions future.</li> </ul>  |
|   | <ul> <li>Supporting workforce transition, including redeploying and upskilling workers from high-emissions sectors to<br/>low-emissions sectors.</li> </ul>   |
|   | <ul> <li>Factoring distributional impacts into climate strategies and policies.</li> </ul>  |
|   | <ul> <li>Mobilising finance and funding for initiatives that support an equitable transition by redirecting a portion of<br/>hypothecated ETS revenue into a contestable fund.</li> </ul>   |

| 46. Economic analysis to inform the development of the Equitable Transitions Strategy | We <b>recommend</b> that Government commission analysis that explores the likely future state of the economy based on the transition pathway, to form a clear articulation of the future state that policy needs to respond to reflect the fact that the transformation of the economy from where it is today to a decarbonised one will take the form of a major structural change.  |
|---|---|
| 47. Accelerate the timeframe for the Strategy's development                           | <ul> <li>We recommend that:</li> <li>The timeframe for developing an Equitable Transitions Strategy be brought forward to the end of 2023.</li> <li>The development and publication of the Equitable Transitions Strategy be fast-tracked, and that the Strategy remains a living plan that evolves and is updated at regular intervals.</li> </ul>   |
| 48. Actions to be taken now   | <ul> <li>We recommend Government</li> <li>Take certain concrete actions now to support impacted firms, employees, and communities and support their transition pending development of the Strategy.</li> <li>Take immediate steps to: <ul> <li>Consider all climate policy decisions through a just or equitable transition lens. This could be done by expanding the Climate Impacts of Policy Assessment to include consideration of the impacts of the policy on equity in the transition to a zero-carbon economy.</li> <li>Develop a method of monitoring and review of impacts of policy on the equitable transition. This could build on existing frameworks applied to measure wellbeing such as the Living Standards Framework and He Ara Waiora.</li> <li>Partner with business groups, including SBC and CLC, to develop business-to-business solutions to help ensure equity in the transition across the supply chain, e.g. through scalable prototype projects to: <ul> <li>build capability within companies across the supply chain to transition toward lower emissions business models and manage workforce and other transition implications; and</li> <li>develop proactive skills and employment pathways to keep displaced workers connected to decent, meaningful work.</li> </ul> </li> </ul></li></ul> |
| ALIGNING SYSTEMS AND TOOLS  |   |
|   | Recommendation  |
| 49. Government accountability and coordination  | <ul> <li>We recommend Government: <ul> <li>Establish a central unit within the Department of Prime Minister and Cabinet to oversee the interdepartmental climate change response.</li> <li>Move swiftly to establish a structure empowered to allocate resources and take decisions necessary on climate policy with the urgency this challenge demands.</li> </ul> </li> </ul>   |

|  | <ul> <li>Establish Vote Climate Change as a specific multi-agency appropriation, which consolidates existing and future<br/>government funding for climate change mitigation and adaptation activities.</li> </ul>  |  |
|--|---|--|
|  | Consider broadening the Commission's recommendation regarding expansion of the <i>Climate Implications of Polic</i> Assessment tool to consider climate change in the development of all new policies, regulations, and fiscal proposals.   |  |
| Funding and financing                                    |   |  |
| Topic  | Recommendation  |  |
| 50. Funding and financing                                | We <b>recommend</b> Government support measures and mechanisms that overcome the challenges of financing projects that contribute to emissions reductions but for which monetising the emissions benefits is not possible. These projects may be technically challenging or projects that simply require more effort than the low hanging fruit projects banks and other finance companies are more likely to assist. |  |
|  | We recommend Government develop a programme of results-based procurement or financing.  |  |
|  | We also <b>support</b> the work of Toitū Tahua: Centre for Sustainable Finance in this area. In particular, we encourage Government to support implementation of the Sustainable Finance Forum's 2030 Roadmap, including through a whole of government Sustainable Finance Strategy, as well as the recommendations in Toitū Tahua's response on the ERP discussion document.   |  |
| Emissions pricing  |   |  |
| Торіс  | Recommendation  |  |
| 51. Emissions price paths to inform investment decisions | We <b>recommend</b> Government provide certainty on the projected price corridor for NZUs under the ETS by working with business to develop a shadow carbon price to inform investment decisions.   |  |
| 52. Emissions pricing                                    | We <b>recommend</b> Government provide clarity on the likely future price corridor for NZUs under the NZ ETS and the major assumptions underpinning that work.  |  |
| 53. Forestry should not delay gross emissions reductions | We <b>support</b> the Commission's recommendation to transition from a reliance on exotic forests to permanent native forests by 2050.  |  |
|  | We recommend that the ERP includes a specific action to investigate what policy measures would incentivise native plantings.  |  |
| 54. Role of voluntary carbon markets                     | We <b>support</b> efforts to develop a high integrity voluntary carbon market for New Zealand to keep us aligned to international best practice and enable private sector entities to take credible and quantifiable climate action.  |  |

| Planning                                  |   |  |
|---|---|--|
| Торіс                                     | Recommendation  |  |
| 55. Planning                              | We recommend Government consider the CCC's advice on planning through the RMA reform process.   |  |
| Research, science and innovation          |   |  |
| Торіс                                     | Recommendation  |  |
| 56. Research, science and innovation      | We <b>recommend</b> ETS proceeds are partially hypothecated into research and innovation targeted specifically at emissions reductions and achieving an equitable transition Potential uses include:  |  |
|   | <ul> <li>Supporting development of the complementary measures to the Energy Efficiency and Conservation Authority's (EECA)<br/>Government Investment in Decarbonising Industry (GIDI) Fund mentioned in section 2.2.1 – process heat.</li> </ul>  |  |
|   | <ul> <li>Introducing results-based procurement of financing to drive down emissions as mentioned in section 4.2 – funding and<br/>finance, alongside investment crowded in from the private sector, or to expand application of the Green Investment<br/>Fund.</li> </ul>   |  |
|   | <ul> <li>Establishing a national centre of excellence to drive innovation toward low emissions outcomes in New Zealand,<br/>administered by central Government and modelled on successful public-climate innovation partnerships internationally,<br/>such as the Climate-KIC model used in Europe and Australia.</li> </ul>  |  |
| Behaviour change                          |   |  |
| Торіс                                     | Recommendation  |  |
| 57. Behaviour change – empowering action  | We <b>recommend</b> Government deploy a marketing strategy similar to that developed for the COVID-19 response to drive behaviour change, building awareness and buy-in to the value of an equitable transition to a zero carbon, climate resilient society.<br>We <b>recommend</b> the public sector unit we propose in our section on Government accountability and coordination (questions 21-23) oversee the development and deployment of this strategy. |  |
| 58. Tools to assist with behaviour change | We <b>recommend</b> the introduction of additional policy tools to support supply-chain emissions management (behaviour change), such as:   |  |
|   | <ul> <li>Support the development of methodological standards and create incentives for the calculation, exchange and display of environmental data, ensuring all types of stakeholder are considered</li> </ul>   |  |
|   | <ul> <li>Set guidelines for the production of environmentally responsible products (designed to last, reusable, minimal emissions associated with production).</li> </ul>   |  |
|   | <ul> <li>Provide investment in the research to achieve a successful digitalisation for a green economy.</li> </ul>  |  |

| Circular economy and bioeconomy  |  |  |
|--|--|--|
| Торіс  | Recommendation   |  |
| 59. Circular economy   | <ul> <li>We recommend:</li> <li>Policy measures to move New Zealand to a circular economy. We point to the submissions made by our partner organisations Circularity and the Sustainable Business Network on this issue.</li> <li>Government investigate how models like XLabs could be replicated or scaled to enable a wider range of businesses to benefit from programmes designed to build awareness how the circular economy can be practically applied.</li> </ul>  |  |
| 60. Bioeconomy   | We strongly <b>support</b> the CCC's recommendation to develop and deliver a strategy for a thriving, climate-resilient bioeconomy that reduces emissions through displacing fossil fuel-derived production materials and energy sources. We are pleased to see this reflected in the discussion document.   |  |
|  | Zealand bioeconomy.  |  |
| 61. Support the development of biomass supply chains   | We <b>recommend</b> that a nationwide survey is undertaken to ascertain current availability of sustainable biomass energy supply -<br>from woody and non-woody biomass through to waste oils and sustainable crop - and project the forward demand for biomass<br>across individual regions.<br>We <b>recommend</b> that a nationwide sequestration model is developed.   |  |
| 62. Undertake a programme to identify<br>solutions to supply the North Island<br>gas network with renewable gases as<br>part of a wider bioeconomy | <ul> <li>We recommend that pilot biomass plants are now developed (at least 10) across industry, landfill, and agriculture sites.</li> <li>We recommend the following projects for consideration: <ul> <li>Example biogas generation sites at dairy farms of significant (&gt;750 cows per shed) scale – five sites within proximity of significant (industrial) natural gas consumers. This will likely be in the Waikato region.</li> <li>Example biogas generation sites at smaller dairy farms – five sites within close proximity of each other to allow coordination of waste streams – likely in the Waikato region.</li> <li>Financial support to industry (meat and dairy processing specifically) to develop their own biogas plants, and export green methane into the gas network. Members of the CLC are planning biogas plants presently but will require</li> </ul> </li> </ul> |  |



### Submission on the Emissions Reduction Plan

Sharon Bevins,

26/11/21

This submission is made on my own behalf

1. What do you think are the most important things to be considered in the development of the emissions reduction plan?

My name is Sharon Bevins. I am 62, live in New Plymouth and with my husband have a small block running beef animals. I have had a good career in health, opportunities and like many others in my situation have unwittingly become part of the problem, I have accumulated and caused a lot of environmental damage (3 children, big house, multiple cars, travel, lots of stuff). I did not realise we have been robbing future generations. I feel powerless to make a difference as I know small individual actions are not enough, we need lots of momentum and a sea change to learn to live with less and without growth. If we have 3% growth a year, economic activity (and the environmental impact it causes) would double in 24 years.

We need to take stronger, faster and courageous action. The plan does not go far/fast enough. I can't believe the low priority that we all place on emissions and environmental degradation despite the facts being known for decades. I think because **the media and** government don't give climate change enough priority, we are lulled into thinking that it's not important – after all if it was important we'd hear about all day long like Covid-19 (which is way less important than the disaster we're headed for) and we would be taking drastic measures instead of letting emissions rise by over one-third since the 1990s. In 1979, the Officials Committee on Eutrophication, which was formed by government, advised that the use of bag nitrogen would lead to increased stock numbers, nitrate leaching and surface run off and that this problem needed to be managed and monitored.<sup>1</sup>

FORGET COVID, WE HAVE BIGGER ISSUES!



<sup>&</sup>lt;sup>1</sup> Jonathan West in 'Mirrors on the Land: Histories of New Zealand's Lakes,' Journal of New Zealand Studies NS30, 2020.

We desperately need widespread education about climate change (not led by those with conflicts of interest) so people will push for and support change. Move beyond political labels – we all need to be greenies and treat the environment as part of ourselves. You may say this will create needless anxiety – there will be more anxiety if we don't take more action faster, I have huge anxiety now about the inaction, I worry about it every day and despair at the life my grandchildren will inherit due to our short-sightedness. People don't understand the importance of our shrinking biodiversity and are mystified at the concern over threatened species. They haven't grasped that everything is connected and we depend on this web of life and that the soil, which is a major source of biodiversity and carbon, is hugely degraded world-wide including NZ.

We need more priority on the understanding of the issue as a global problem. You hear people say, "so what if it's a bit warmer or the sea is a bit higher." People feel insulated in NZ because our climate problems so far are minor compared to other countries, they don't realise that western countries have caused most of the problem. And that environmental collapse will be global and preceded by catastrophic events, including wars over resources and create climate refugees. Climate change will affect all of us.

We need to change the economic model which values growth before all else. The priority needs to be on common good and justice vs individual good to solve this crisis. The world-view of indigenous people is more aligned with this approach. Despite these principles being in most government documents it doesn't really happen, look at freshwater, exemptions granted to continue polluting due to the impact on individual businesses rather than considering the impact on the environment and all of us – change is far too slow. We only have one planet and we need to value it, this means degrowth, renewable energy and decreasing our impact on the earth e.g. Kate Raworth's Doughnut model.

We should not offset emissions in other countries or send waste there and worsen things for countries less well off – this is abhorrent.

**The most important goods need to be publicly owned,** transport and probably energy. The market economy and fear of state intervention has not served us well – inequality, emissions and degradation has worsened. Things need to be agile though, bureaucracy is an issue, how do we participate easily?

**Prioritise regulatory change and look at market power** which emphasises and influences us to think that low impact individual consumer actions such as reusable coffee cups, recycling and buying greener products are the answer. We need less products, not greener ones and address things at the source. The current approach supports production and also distracts us from the big stuff that we need to be considering and supporting such as subsidies for emission reduction strategies and setting up community collectives.

We need disruptive change, relying mostly on technology is a maintenance of the status quo. We can spend millions on titivating nitrogen use, monitoring, urease inhibitors and so on which of course is supported by industry because then they don't have to change the business model which depends on selling products and intensive farming. A case in point is Ravensdown's very convincing example of environmentally targeted activities within their "Sustainability Summary".<sup>2</sup> There's a plethora of environmental initiatives, greenhouse gas emissions are below target and the UN Sustainable Development Goals are weaved into performance measures. While this is laudable, my understanding is that urea has helped fuel intensification and therefore is a major contributor of the high methane levels (as well as water pollution). Ravensdown's measures may reduce harm but they do not address farming intensification (although the supply of urea did reduce a bit (8%)). In addition, the price of urea increased over \$200 a tonne between Feb & Aug this year (33% - 37% increase) which is another cost pressure for farmers. Growth requires more energy, are we ready for nuclear energy, can we do it safely?

We are better off to ban nitrogen, deintensifiy and look at broadening food production beyond meat.

People are afraid of losing personal freedoms and want free enterprise and private ownership to remain sacrosanct – that's how we lost all our natural resources. I think we should acknowledge that the current model benefits too few people – we will all lose our freedom and so much more if we do not prevent environmental collapse.

The export strategy needs a re-look, it forecasts a significant rise in primary exports which will cause more degradation – we need to feed ourselves and import less.

**Giving priority to zero waste and a circular economy** – this has the benefit of favouring community action and food production – the supermarket duopoly is destructive environmentally and for our health.

2. What new initiatives would you include in an emissions reduction plan for Aotearoa?

- Invest in cycle and walkways properly to get us out of cars incentivise, encourage it
  and monitor it. It is not safe to cycle around town where I live. It needs to be
  accepted that it will be costly, this is the price of building an infrastructure centred
  on vehicles, that Auckland cycle bridge should not have gone ahead.
- Cap aviation emissions.
- More priority on light rail in cities, way more energy efficient bring it in sooner.
- Make public transport free like in other countries.
- Affordable electric cars with decent infrastructure our council declined a free Supercharger Station this month (Tesla & 1 generic) and requested that all options for an EV charging station are investigated with a report back period of 12 months – this is far too slow. Because we need more electricity for this transition, this means looking at overall energy conservation more seriously (a case for public ownership).
- Education on the climate/emissions problems and solutions schools and the public.
- Make sure the earth is factored into any undertaking/business. Introduce Kate Raworth's Doughnut model which places meeting people's needs at the centre (UN Sustainable Development Goals) whilst living within planetary boundaries.<sup>3</sup> Current

<sup>&</sup>lt;sup>2</sup> <u>https://integratedreporting.ravensdown.co.nz/download/Ravensdown-Sustainability-Summary-2020-21.pdf</u>

<sup>&</sup>lt;sup>3</sup> <u>https://www.mbie.govt.nz/dmsdocument/5722-doughnut-economics-kate-raworth</u>

cost/benefit is not appropriate as the true costs of business and resources used are not calculated.

- Increase emission targets. Methane is important as it's short acting and is an opportunity to reverse things. Bring agriculture into the ETS and look at the price controls the ETS hasn't worked well so far.
- Support for people to pursue regenerative agriculture or change land-use in order to recover biodiversity and decrease the number of cows and methane emissions.
- No more synthetic nitrogen, this is fuelling intensification and emissions.
- Stop fossil fuel exploration.
- Incentivise solar energy like other countries and have distributed energy. Seems things are very wrong in the electricity market. The August 2021 NZ Geographic article by Dave Hansford explains things well:

"top-down, one-way power monopolies must be replaced by active, equitable power-sharing local networks, with energy conservation as their central remit, not profit from production."

- Should we have spas and water features etc etc? There's a lot that can be done when things aren't driven by profit and growth.
- Transparency (monitoring) of business emissions so we can see what's going on.
- Make climate policy more independent, less subject to the whims of political cycles, something that all parties sign up to.
- Support for community-led initiatives. Make it easy to trial stuff support with funding and minimise bureaucracy. Look at housing collectives more seriously and how these can be encouraged and supported. There are a lot of partially empty houses with so many people living alone.
- Incentivise growth of native vegetation over exotic vegetation.

# 3. What do you see are the main opportunities and impacts of emissions reduction policies in Aotearoa?

The main benefit is survival, this is our only chance for life. Biodiversity and ecosystem services that our lives depend on, will start to recover including our degraded soil.

There are also societal benefits as the solutions and placing the environment and common good first means improving inequality. Fixing the worsening inequality is important, not just because of those who do not have enough, but because wealthy people have more influence in society, are big emitters and most want to retain their position and status quo growth and production. It is hard to have justice when there are such power imbalances.

I see a change in the mix of food production to less meat and more plant based. There will be more community-based food production and other initiatives. There are so many health and social benefits from decreasing emissions – less pollution and chemicals, healthier food, better community connections/support and of course avoiding the terrible climate disasters that will result in chaos, loss of lives and livelihoods, fighting over resources and climate refugees. Ministry for the Environment <u>climateconsultation2021@mfe.govt.nz</u>

Dear Ministry for the Environment,

#### Emissions reduction plan consultation.

Please find enclosed a copy of a letter send to Environment Minister James Shaw on 2<sup>nd</sup> October in the lead-up to COP26. The outcome of this conference will be regarded as not living up to pre-conference expectations of real transformative change.<sup>1</sup>

This suggestion is made with the observation that nation states might have an effective climate act and suitable NDC post-COP26, but we are still affected by what happens globally, plus we have a duty of care to Pacific Island states facing sea-level rise. New Zealand may be regarded as a small country who does not contribute significantly to carbon emissions, but this does not account for our emissions in terms of per head of population. Also, we remain equal in terms of diplomatic capabilities where there is a 'one person, one vote' format with the ability to lead other nations.

"There is missing law" said UK lawyer Polly Higgins (1968-2019) speaking of environmental protections for the Earth.<sup>2</sup> This presentation<sup>3</sup> notes the anthropocentric nature of existing law, with need for an ecocentric focus. Side events<sup>4</sup> at COP26 have discussed the concept, especially following the recent IPCC report<sup>5</sup> and the insufficient levels of overall NDC's from nations to achieve the necessary carbon emissions.

The main recommendation from this submission is that Aotearoa supports the ecocide initiative, and investigates potential objections by seeking to make contact with its main proponents who can address these. These figures can be found via the Stop Ecocide International<sup>6</sup> and Promise Institute for Human Rights (UCLA)<sup>7</sup> websites. There are a series of presentations on the concept,<sup>8</sup> including the side events at COP26.<sup>4</sup> Particularly helpful is this presentation <sup>9</sup> that explains the history, context and rationale of the ecocide concept. The Promise Institute for Human Rights site<sup>7</sup> contains several examples of media coverage.

"We must act now, for the sake of future generations" was included above the video the Ministry released as COP26 was taking place. The statement from their website<sup>10</sup> "we

cannot afford to wait to act against the threat of climate change. We must work together to protect our planet and people and ensure a greener, more resilient future for us all" carries a global emphasis and refers to nations acting together to address carbon emissions. It is important that we not only reduce emissions at home, but contribute to global efforts to limit temperature rise. Ecocide means "killing our home."<sup>7</sup>

It's one reflection to note the concept of metabolism (sum total of all the processes happening in the body) can be applied to the world of thought also. During COP26, it was revealed a contingent of 503 fossil fuel lobbyists were present at the event.<sup>11</sup> Their presence would have had the effect of diluting the quality and effectiveness of the eventual document, and an ecocide law would have a deterrent effect to this influence. The Ministry document<sup>12</sup> contains a series of domestic actions that are being taken to reduce emissions. Given that we are stakeholders in what happens globally, this submission advocates that Aotearoa New Zealand give its support to advocates of the ecocide concept by inclusion of this global initiative.

A 'fundamental rethink' of our approach can include this, especially since the major carbon emitters get away scot-free under existing settings.

On 7 November, the Ministry posted a short video and link drawing peoples' attention to this consultation. Reiterated is this question posted in response:

The UK lawyer Polly Higgins (1968-2019) advocated for an amendment to the Rome Statute to make environmental destruction the 5th crime against peace at the International Criminal Court (ICC). She said "there is missing law" here.

Climate research presented at COP26 (Lord Adair Turner) has shown that overall pledges (even if enacted) will be insufficient to produce necessary carbon emissions.

Does the MfE call: "we must act now, for the sake of future generations" acknowledge the need for this measure? How do you conceptualise it, and what is your policy approach to the concept? What do you perceive are the barriers to its implementation?

This post is made with the observation that individual nation states like Aotearoa might have effective climate laws and NDC's post-COP26, but are still affected by what happens globally. We also have a duty of care to Pacific Island ('large ocean') states facing sea-level rise. It is often said the nations with the least responsibility for climate change bear the disproportionate effects.

Yours sincerely,



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James Shaw Climate Change Minister James.Shaw@parliament.govt.nz

Dear Minister Shaw,

The COP 26 conference<sup>1</sup> in Glasgow from 31 October to 12 November this year is described in terms of its urgency, and the last real opportunity the world has to keep global warming below 1.5°. The recent IPCC report<sup>2</sup> clarifies this, as does this article.<sup>3</sup>

There are hopes for real change as an outcome of the conference, and that delegates come up with a meaningful approach to the challenge posed by increasing emissions. The concept of the planetary boundaries and tipping points<sup>4</sup> helps grass-roots people to understand this issue.

This is a spontaneous decision to contact you, having heard this interview<sup>5</sup> you gave. I want to take the opportunity to ask you to support this initiative as New Zealand's representative in Glasgow.

In 2019 this *Guardian* article<sup>6</sup> appeared discussing the figure of Polly Higgins, and her 'earth lawyer' advocacy<sup>7</sup> for environmental destruction to be made the 5<sup>th</sup> crime against peace at the International Criminal Court. This requires an amendment to the Rome Statute,<sup>8</sup> and requires the support of nation states to be tabled at the UN.

The definition of ecocide is given as:

For the purpose of this Statute, "ecocide" means unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.<sup>9</sup>

The *Guardian* article links to her TED talk,<sup>10</sup> and a subsequent documentary<sup>11</sup> shows her walking the hallways (38 mins) of a preparatory summit in Bonn, Germany in the lead-up to the Paris Conference in 2015. She particularly wants to talk to representatives of small island ('large ocean') states who are facing sea level rise.

New Zealand has a duty of care to Pacific Island States. You are likely to meet figures who support the ecocide initiative in your travels. Please take the time to listen and discover how Aotearoa New Zealand can support what they are trying to do.

I recently asked a question (1 hour 3 min) about ecocide law in this presentation,<sup>12</sup> which featured Helen Clark as guest speaker. Her response was that it deserved investigation, and that those who contribute least to climate change bear the disproportionate effects. This is certainly true in the case of Pacific Island States. The basic rationale of this request is that New Zealand may have a state of the art climate act and NDC, but we are still stakeholders in what happens internationally.

We have seen a recent example<sup>13</sup> where an ecocide law could act as a deterrent to bullying corporate behaviour. Why should an environmental lawyer have to face jail time for defending indigenous rights? This is but one example of businesses acting with disregard for the planetary boundaries, and posing a threat to humanity.

If you are seeking to investigate this concept further, two suggested sources are this TED Talk<sup>14</sup> from Polly Higgins' successor, and this panel discussion<sup>15,16</sup> about the origins of the concept and its potential application. It's appreciated that you're likely already familiar with the concept and in touch with your international counterparts. In your capacity as Climate Minister, please make the effort to contact people who support this concept and discuss how New Zealand can encourage its progress.

I have cc'd two organisations with an interest in progressing ecocide law. They won't know me from a bar of soap, but they are good sources of information on this concept who are likely to value developments in this space. This letter is written in Perpetua 14 to make it easier to read.

Yours sincerely,
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100% MADE OF NEW ZEALAND

Submission on Te hau mārohi ki anamata Emissions Reduction Plan Discusssion Document

24 November 2021

SILVER FERN FARMS LIMITED

### Introduction

Established in 1948, Silver Fern Farms is New Zealand's leading processor, marketer and exporter of premium quality lamb, beef, venison and associated products.

Silver Fern Farms consists of 14 processing sites spread throughout both islands of New Zealand, three regional hubs – in Christchurch, Auckland and Hastings and a corporate office based in Dunedin.

We are deeply connected to the fabric of rural New Zealand. At peak seasonal processing we employ over 7000 staff across our sites. Our farming network is extensive, as our services support over 16,000 farmer suppliers nationwide. In 2020, Silver Fern Farms Limited earned revenue of \$2.5 billion.

At Silver Fern Farms we're embedding sustainability into all we do.

It's the way we're making sure we deliver on the expectations of our customers, who increasingly want to know that their red meat is sustainably produced.

## Our commitment to reduce emissions

Decarbonising our processing operations has been the focus of our efforts in recent years and will lead to a further 42% reduction (from a 2020 base year) in our processing emissions by 2030 - this is on top of an existing 20% reduction since 2018.

We will be out of coal by 2030, if not sooner. We have led the red meat sector by joining the International Science Based Targets initiative (SBTi), we are aiming to have our Scope 1 and 2 targets validated by SBTi by end of 2021.

Scope 3, particularly on-farm emissions, are a much more complicated and daunting challenge, but we are up to it. We have been supporting our farmers to measure, monitor and manage emissions via the provision of He Waka Eke Noa "know your number" workshops, and have set up innovative market-led programmes such as our Net Carbon Zero Beef programme which incentivises on-farm sequestration.

Silver Fern Farms is committed to a regenerative future, and we are determined to use the opportunity presented by a low emissions future to deliver value back to our farmers, customers, shareholders and communities.

We welcome the opportunity to contribute to the Emissions Reduction Plan Consultation.

## **Our Submission**

Silver Fern Farms submission is purposely focussed on five key areas within the agriculture and landuse sphere where we see most opportunity for, or barriers to, accelerated emissions-reduction activity.

In terms of the questions set out in the discussion document, we have chosen not to respond directly to each one. Our submission is focussed on key sectorial issues as well as overall alignment and the need for an equitable transition. We are focussing on these areas for three critical reasons:

- 1. Silver Fern Farms has a clear pathway for significant CO2 emissions reductions at an operations level that will support the achievement of the proposed emissions budgets
- 2. Our biggest emissions challenge, and that of New Zealand more widely, is on-farm and how we manage our unique emissions profile in respect to pastoral agriculture.

3. Reducing agricultural emissions, whilst maintaining New Zealand's unique market proposition as the world's leading grass-fed food producer, is critical to our future success as a trading nation. Unless we can find a fit-for-purpose solution to biogenic methane we will struggle to maintain our competitive advantage internationally and this will have significant consequences for the pace and equity of the transition going forward.

Due to the cross-cutting nature of emissions reductions we also take an interest in wider sectors including energy, transport, the bioeconomy and waste. We have been working closely with the Climate Leaders Coalition/Sustainable Business Council on their comprehensive submission and are generally supportive of the recommendations they will present.

We also work closely with Beef + Lamb NZ and the Meat Industry Association of New Zealand who will be making their own submissions. While there are many areas of mutual agreement in these submissions, our commercial focus and our market-led approach does mean divergence occurs on some issues. We see this as positive.

We consent to this submission being published on the Ministry's website.

## Our Approach

Silver Fern Farms sees the transition to a low carbon economy as an important opportunity to create new forms of value and position New Zealand Inc, and our hard-working farmers, as climate innovators.

As a company we have committed to a regenerative future – and are currently exploring how we can integrate nature-based solutions into our business model. We are backing our farmers to continue their global leadership in pastoral food production and leading with our role to better connect customer expectations with producers.

While we take an interest in debates around targets, accounting systems and metrics we see more value in seeking out market signals, incentivising positive on-farm practices and supporting these through investment and extension programmes that return increased value back through the farm-gate.

### A Comprehensive Roadmap is needed

The ERP discussion document was lacking in detail around the work underway to support the agriculture sector transition.

We know there is much work occurring at central government level, but from an industry perspective this is very dispersed, difficult to keep up with and feed into. This lack of industry involvement (which the red meat industry bears some responsibility for) is a lost opportunity because the sector has some of the best agribusiness, productivity and pastoral system brains in the world, and we can do a better job by working together to crack these issues.

We'd like the relevant policy ministries to show greater leadership in this space and recognise that HWEN is only one component of the policy solutions needed to support the transition.

Our view is that a more comprehensive government-industry roadmap is required to guide the agricultural transition and get everyone on the same page. The roadmap needs to:

 Set out a shared vision of New Zealand being a world leading climate positive food producer by 2050

- Recognise that emissions pricing is not the only game in town. From our perspective HWEN is currently failing in its wider mandate to drive down emissions because of the singular focus to design the Minimal Viable Product solution to pricing. Returning to a wider focus on how the government and industry can work together to meet the emissions reduction targets and doing more to promote the market opportunities and benefits of low emissions food production, would be welcome.
- Recognise the importance of market-led strategies and explore how NZ inc could work together to create an even stronger nature-positive halo for our food producers
- Consider new areas of work that could deliver an emissions reduction dividend consumer education programmes for instance
- Capture all the current policy, research and development, science and NZ inc activities underway to support the agricultural sector transition
- Agree priorities there is a lot going on but limited time. We think it would be useful to agree collective priorities for the transition and systematically work towards these at scale, and at pace
- Set out accelerated co-funded investment pathways for priorities such as methane research and development
- Create opportunities for focussed dialogue and check-ins between Government and farming communities to build trust and constructive engagement

## Silver Fern Farms five priorities to accelerate emissions reductions:

**Priority One: A circuit breaker investment into biotech and methane reduction** – this is pivotal to our emissions reduction journey and would recognise the scale of our most significant climate change challenge as a country.

Silver Fern Farms is fully supportive of the proposals set out in the CLC/SBC submission in this regard and will continue to work alongside them on a detailed proposal we hope can be considered in Budget 2022 discussions.

The research effort needs to be scaled-up significantly, to a minimum of \$100 million a year by 2025 and be more coordinated so government, research institutes, farmers, and the private sector can work together to crack solutions that are fit for purpose in a pastoral system.

Investment to date has been disproportionate to the opportunity that our emissions profile creates for us to lead in this area of science. The emissions, climate, commercial and reputational dividends here are immense.

**Priority Two: Focus on the Farm-gate and bring it all together to increase certainty** – let's land emissions pricing via He Waka Eke Noa (HWEN) with no delays and continue our world-leading commitment to a **farm-gate** emissions management focus (or a clear pathway to that).

While separate from the ERP, the outcome of HWEN discussions and advice to Ministers will shape the emissions reduction pathways for the sector going forward. It is important that we adopt a policy mechanism nationwide that really drives emissions reductions rather than just expanding the ETS model which has led to speculation on carbon price and a focus on offsets at the expense of productive land

Agricultural emissions pathways should be measured on-farm to ensure each farm business is assessed and rewarded for changes in their farm systems which result in emissions reductions.

We want to support progressive farmers who take action on their farms through using available mitigations, those who do the hard work should not end up subsidising more intensive farms or industries – as this fundamentally undermines an equitable transition. Having the cost incurred on farm allows efficient producers (those who can generate more outputs from the same inputs, i.e., animals, through better genetics, feeding and other initiatives) to prosper relatively, and those that are inefficient to be disadvantaged relatively.

A farm-level point of obligation incentivises farmers to consider a range of farm management approaches and nature positive techniques that can respond to the market and create value in a low emissions economy. This could include integrated sequestration, genetics, feed, soil conservation and diversification.

This has the benefit of encouraging good farm practice and creates good exemplars for us to use in marketing campaigns to grow value for produce in overseas markets

It is concerning that HWEN appears to have been carved off from the Emissions Reduction Plan as clarity on issues such as baselines, soil sequestration, exotic forestry limits, accounting methods and supporting measures is required for accelerated emissions reduction.

The lack of certainty on these issues is making it increasingly difficult for farmers to make investment decisions, and day-to-day choices. Many farmers have achieved significant efficiency gains and emissions reductions already but have struggled to know if they are on the right track or not. We think this is driving frustration – most farmers we talk to just want to be treated fairly, be empowered to plan for the future and get on with their work producing great food.

A final ERP that can mesh HWEN issues alongside wider opportunities for emissions reduction into a clear roadmap for the agricultural transition would be a great outcome – but this will require a significant step-up from the high-level and vague components included in the discussion document.

We also stress the importance of ensuring cross party agreement on HWEN, the Emissions Budgets and Emissions Reduction Plans, the split-gas approach and accounting methodologies. This will offer stability and help all sectors of the economy make investments decisions with confidence.

Increased clarity and confidence in investment pathways should have a significant emissions reduction dividend.

**Priority Three: Appropriate nature-based solutions at scale** – greater research and co-investment (private and public) is needed to provide the evidence base for, and to scale, nature positive solutions on-farm to support the pivot towards a fully regenerative low emissions pastoral production system in New Zealand. Nature-based solutions offer gross and net reductions potential and should be prioritised based on the co-benefits they offer.

Our market signals suggest regenerative agriculture principles align well with growing customer expectations around the way their food is produced and many sheep and beef farmers in New Zealand have long since adopted many of these practices. This is an area where market-led change can align closely with regulatory/policy imperatives, but we need to act quickly and decisively if New

Zealand is to stake a strong claim to the regenerative space, as it is already crowded, and many claims lack rigour.

The emissions benefits of nature-based solutions are beginning to be more quantifiable with recent international research suggesting effective nature-based solutions could contribute 20% of the mitigations needed to keep global warming to under 2 degrees Celsius by 2050.

[To note: we exclude large-scale exotic afforestation as a NZ appropriate nature-based solution due to the adverse impacts on productive land-use, biodiversity, rural communities, and economies)

**Priority Four: If Pine is the only answer, we're asking the wrong question** – Like many, Silver Fern Farms has been concerned for some time about the speed and scale of productive sheep and beef land being converted into pine trees. Driven by a sky-rocketing carbon price this conversion continues to accelerate and is threatening the scaled viability of grass fed, biodiversity rich sheep and beef farming in New Zealand.

Both the Climate Change Commission and the Minister for Climate Change have indicated the price of carbon needs to increase significantly to drive down carbon emissions. This is correct, however without limits on forestry offsets (i.e., the amount of carbon credits emitters can purchase to offset their emissions rather than reducing them) the more likely outcome is an even faster increase in the sale of sheep and beef farms into forestry, with little or no actual reduction in GHG emissions.

Silver Fern Farms fully supports encouraging the integration and optimisation of carbon sequestration within farms rather than the current policy settings which are encouraging whole farm conversions. Integrating greater biodiversity (through the establishment and care of woody vegetation) is a win-win situation where New Zealand can meet its climate obligations and still maintain and enhance livestock production – which is in line with provisions in the Paris Agreement about food production.

While there is absolutely a place for forestry, an urgent discussion and decisions about placing limits on forestry offsets is required to shift this focus and the ERP needs to provide strong policy guidance to enable this to happen.

This was highlighted by the Climate Change Commission's final advice to the Government, which recommends amendments to the ETS and other climate policies to manage the area of exotic forests planted. We support these recommendations but encourage their implementation at pace, in parallel with much stronger requirements for gross emissions reductions across energy and transport.

The conversion of farmland to forestry in absence of this strong guidance, genuinely threatens the fabric of rural New Zealand, deliver little to no co-benefits, and is preventing the scaling up and start-up of more appropriate climate solutions.

**Priority Five: Lessons from our process heat conversion** - Silver Fern Farms firmly supports gross emissions reductions at source. The mainstay of our decarbonisation journey to date has been an active work programme to end coal use and accelerate the electrification of our processing networks sites. Collaboration with EECA, and, the support we have received from the GIDI fund, has been helpful in accelerating our work programme.

We are supportive of the overall direction of the ERP to accelerate the conversion of industrial process heat sources, increase the use of biomass, and support the trend of industrial electrification

in New Zealand. But we encourage stronger pathways/programmes in final ERP document in the following areas to reflect the real-world lessons from our efforts to date:

#### • Skills and labour shortages are a constraint

We have concerns around the availability of resources to undertake the level of work required to decarbonise New Zealand's industry. The ERP should carefully sequence the transition taking into consideration the availability of skilled experts to design and implement new systems, capacity to supply new equipment, reliability and affordability of alternative fuel options, and appropriate consenting and regulatory approvals.

Given that process heat/energy transition will continue as a short-term focus of New Zealand's emission reduction efforts, we think the ERP should clearly factor in the impact skill gap and labour shortages may have on efforts to decarbonisation. Investment in initiatives and programmes that may avert or reduce the impacts of these should be a key area for current Government investment.

Industrial electricity market needs improvement

The wholesale electricity market plays a critical role in the transition to a low carbon economy. In New Zealand, electricity is more expensive than other energy sources which creates significant cost pressures for industrial users when decarbonising.

It seems to be widely accepted that wholesale energy market is failing to deliver fair, consistent and competitive pricing for industrial users, and this threatens to slow the transition. We would encourage the final ERP to prioritise work to address the efficient operation and trust in the electricity market.

Silver Fern Farms would support a move to real time pricing for the wholesale electricity market as a key emissions reduction enabler.

There also needs to be greater clarity about the emissions intensity of electricity supplies and we would welcome to completion/refresh of a national energy strategy in this regard.

#### • Biomass has potential but a mature market is needed

We support policies which create smoother and more transparent markets for biomass.

Decisions to invest in biomass require certainty of long-term supply, reliability and transparent pricing so significant maturity of this supply option is required before it is at a scale to support large-scale energy conversation.

### [ENDS]

### **Additional Information and Contact:**

Silver Fern Farms is happy to provide more information on our submission.







# Submission from Straterra To the Ministry for the Environment Emissions Reduction Plan November 2021

## **Key points**

- Many of the regulations and policies to reduce emissions are not necessary given the sinking lid Emissions Trading Scheme (ETS) and we recommend they not be imposed.
- Pending the reaching of bilateral agreements to obtain overseas carbon credits, we propose the ETS should contain a mechanism to benchmark the NZU price with that of our trading competitors.
- Policies to transition out of thermal coal for industrial process heat need to incorporate the importance of avoiding carbon leakage which would affect people's livelihoods without benefiting the global climate.
- The Climate Change Commission's demonstration path of coal fired electricity generation ending in the mid-2020s is short sighted given the useful role limited volumes of coal play as a back up to renewable sources.
- Continuing with coal (and gas) can make the increased electrification goal easier to achieve and reduce emissions / increase decarbonisation in the process.
- We agree a target of 50% of all energy consumed coming from renewable sources by 2035 more realistic and less costly than the 100% renewable electricity target.
- The goal of 95–98% renewable electricity by 2030 would be counterproductive to reducing emissions overall because decarbonising the last few per cent of the electricity mix comes at a very high marginal cost of abatement.
- We support the recommendation to develop a national energy strategy which may find coal has a future to reduce overall emissions in New Zealand.

## Introduction

- 1. Straterra is the industry association representing the New Zealand minerals and mining sector (including coal). Our membership is comprised of mining companies, explorers, researchers, service providers, and support companies.
- 2. The sector is proud to be part of the solution to climate change. The products of mining will play an important role in reducing global emissions.



- 3. We welcome the opportunity to comment on the discussion document, <u>*Transitioning to a Low-Emissions</u>* <u>and Climate-Resilient Future</u>, and having a say in shaping the government's emissions reduction plan.</u>
- 4. Straterra supports the international imperative to reduce carbon emissions and New Zealand's obligations under the 2015 Paris Agreement.
- 5. It will be important that the government's Emissions Reduction Plan does not simply transfer emissions, along with business activity, offshore, ie not benefiting world climate but risking economic harm to New Zealand. Integral to this is maintaining the international competitiveness of affected sectors.
- 6. This submission focuses on two chapters of the discussion document:
  - Emissions Pricing
  - Transitioning Key Sectors Energy and Industry

## **Emissions Pricing**

## The ETS

- 7. The Climate Change Commission has recommended a range of policies and interventions to achieve the net zero goal. These are intended to complement the Emissions Trading Scheme which has recently been reformed.
- 8. We argue many of these interventions are not necessary given the ETS reforms specifically the introduction of a sinking lid, ie a fixed volume of NZUs in the scheme which is to be reduced annually, which means emissions cannot, as a matter of arithmetic, be reduced below this lid. The additional interventions will impose costs on the economy without having any impact on emissions. At best, they will enable the carbon price to be lower than it otherwise would be for a given amount of reductions.
- 9. We recommend that regulations and policies to reduce emissions should not be imposed in addition to the ETS.

## International carbon trading / price

- 10. As the government would no doubt accept, a combined international approach including an international trading scheme is needed for New Zealand and global emissions to be reduced. Work towards this under the Paris Agreement had not progressed to date, but we are encouraged by the developments at COP26 in Glasgow earlier this month. The New Zealand Government could soon enter into bilateral agreements with other countries to obtain overseas carbon credits, we understand.
- 11. We argue that carbon trading needs to be open to the private sector; however, the above is a step in the right direction. We congratulate the government for its part in this achievement and hope that New Zealand works hard to develop these bilateral agreements in the near future.
- 12. The carbon price faced by New Zealand emitters, and the stringency of other policies to reduce emissions, need to parallel those faced by our international trade competitors and partners as much as possible, so we are not made uncompetitive and emissions leakage does not result.
- 13. The main flaw of the NZETS is that it does not take account of carbon prices in international markets. Consequently, it risks undermining New Zealand's international competitiveness with no benefit for the world's climate.



14. As an interim solution, pending the reaching of bilateral agreements, we propose the ETS should contain a mechanism to benchmark the NZU price with that of our trading competitors.

## **Energy and Industry**

## Preparing the electricity system for future needs

15. The Climate Change Commission has made a range of recommendations for a low-emissions electricity system. The commission's demonstration path has coal fired generation at Huntly ending in the mid-2020s.

## Coal as a back up

- 16. We think phasing out coal so fast is short sighted given the useful role limited volumes of coal play, and will continue to play, as a back up to renewable sources and thus in providing energy security.
- 17. That back up occurs in dry years when the hydropower is limited; at times when the wind isn't blowing and the sun not shining; and also in times of gas outages. If coal were removed from the electricity system, New Zealand would face electricity shortages and disruptions / blackouts.
- 18. We recognise that coal's role in electricity generation is limited but it makes a crucial contribution in this backup role and this should continue, even, as we argue below, as part of a strategy to lower energy emissions.

## The expense of new renewable generation particularly hydro

- 19. The commission's mid 2020s coal phase-out track is also unrealistic given the difficulties and expense of building sufficient new renewable generation capacity. These challenges need to be taken account of, when considering the speed that coal is phased out, but they do not seem to be.
- 20. The government's intention is that increased renewable generation capacity, and perhaps the New Zealand Battery Project (the proposed Lake Onslow pumped hydro scheme) or alternatives, will reduce the demand for coal over time. But the cost and difficulties associated with increasing enough renewable generation to meet the country's expected growth in electricity demand are large. Furthermore, it is not certain that the proposed Lake Onslow pumped hydro scheme / battery project will go ahead. This all points to the role for limited amounts of coal or gas as a backup needing to continue.

## Gas vs coal

21. While the Commission accepts a role for fossil fuels as a backup, it sees gas playing this role and has given it a longer life in its path. As matters stand, there is uncertainty in future gas supply in New Zealand, partly because of government policy to greatly constrain new oil and gas exploration, and more importantly in the short term from outages at existing producing assets. Coal is a reliable and flexible energy input and should continue to play its current role to safeguard New Zealand's energy security.

## Future demand for electricity to assist in decarbonisation

22. Electricity demand is likely to increase significantly in the future as increased electrification of transport and industry occurs. The commission's path has electricity generation increasing at 20% above 2018 levels by 2035 to meet industry and electric vehicles' needs. The bulk of the new generation capacity is likely to be renewable which, of course is very positive for New Zealand emissions path. However, the case for a small amount of gas and coal as a backup to this new renewable electricity is as strong as it is



for the current generation. And in fact, in volume terms – if not as a proportion – there is even a case for it to increase over that time to meet increased demand.

- 23. In spite of an increase in gas and coal use in electricity generation, lower emissions for New Zealand would still result through greater electrification, ie as transport and industry switches to electricity. In other words, perhaps paradoxically, continuing with coal (and gas) can make the increased electrification goal easier to achieve and reduce emissions / increase decarbonisation in the process.
- 24. Ironically, climate change is likely to intensify seasonal and intraday weather conditions, further testing the resilience of the national grid as the country becomes more reliant on renewable generation. This issue strengthens the case to continue using coal (and gas, if still available) to provide backup into the future.
- 25. The Interim Climate Change Committee estimated that achieving 100% renewables, without any dry-year reserve thermal generation, could add more than \$800 million to the cost of electricity each year. It quantified the emissions abatement cost at more than \$1200 per tonne of CO<sub>2</sub>e, as the percentage of renewable generation nears 100%. That is almost 20 times the current price of CO<sub>2</sub> on the secondary market.

## **Decarbonising industry**

- 26. Thermal coal as an industrial heat source has an important role in maintaining the international competitiveness of our agricultural sector dairy in particular and in domestic food production.
- 27. The government has announced a ban on the installation of new low and medium-temperature coal boilers used in manufacturing and production from January 2022 and has proposed a phase out of existing coal boilers by 2037.
- 28. It is offering financial support to businesses that transition out of coal for industrial heat and is looking to support this by developing national direction for industrial greenhouse emissions under the RMA, and also under the new legislation to replace the RMA.
- 29. There are a number of issues that need to be considered as the government pushes the transition out of thermal coal for process heat.
- 30. Firstly, as already stated, any policies to transition out of thermal coal need to incorporate the importance of avoiding carbon leakage. Any initiative to reduce coal consumption with a view to reducing emissions should be assessed in terms of its impact on global emissions as well as local emissions. Retaining New Zealand's international competitiveness is fundamental to this.

### Challenges posed by alternative fuels

- 31. Secondly, the anticipated move away from coal to biomass and electricity as a source of industrial process heat presents challenges, physical as well financial, that are insurmountable at present even with government assistance.
- 32. The challenges associated with biomass have been well documented and include its limited quality (eg moisture content), the availability and reliability of supply, transport logistics, and cost. We are not aware of any evidence that supports the proposition to replace coal with biomass at the scale proposed. While we know many individual users have signalled their intentions to switch to biomass, the impact of the combined total coal usage on biomass supply is less certain.



33. In the case of electricity, challenges include the cost of arranging transmission, the capital cost of boiler conversion, electricity capacity at places, and the price of electricity for industrial consumers. It has been estimated that the cost of electricity in terms of operating costs is roughly 3-4 times that of coal per unit of heat produced.

## The rising carbon price is incentivising fuel switching

- 34. Coal use for New Zealand industrial process heat has contracted in the last 15 years so the low-hanging fruit has already been picked. Remaining coal is used for logical reasons often being the only available alternative for particular industries (eg steel and cement) or certain businesses in specific locations (eg South Island food processors), hence coal mining being classified as an "essential service" or a "key utility" during Covid-19 lockdowns.
- 35. The government's focus should be on emissions not preferred fuels. A rising carbon price in the ETS is an incentive to pursue options, where these are cheaper than NZUs. Regulations and policies to penalise coal users should not be imposed in addition to the ETS which should be allowed to run its course.
- 36. As the carbon price rises, it will become economic for remaining coal users to switch to an alternative source. Our view, however, is that many businesses would fail long before the carbon price reached that point because the costs are so high. The consequence is that New Zealand would export emissions and jobs, while contracting our economy, affecting people's livelihoods, and not benefiting global climate.
- 37. The analysis done to date, eg the Ministry for the Environment's work on marginal abatement cost curves for industries, assumes that industries remain in business regardless of the abatement cost, and seems to assume that the rest of the world shows the same commitment to carbon pricing as New Zealand does.

## Setting targets for the energy system

- 38. We agree with the Climate Change Commission's advice that the government's goal of 100% renewable electricity by 2030 should be abandoned.
- 39. The Commission has recommended replacing the 100% goal with a goal of 95–98% renewable electricity by 2030. Even this is extremely ambitious. As matters stand, New Zealand ranks 4<sup>th</sup> in the world for the percentage of renewable electricity generation, behind Costa Rica, Iceland and Norway.
- 40. We argue 95–98% is too high and that such a target would be counterproductive to reducing emissions overall. This is because decarbonising the last few per cent of the electricity mix comes at a very high marginal cost of abatement, meaning electrification becomes increasingly expensive, thereby disincentivising the electrification of transport and industrial heat. In other words, to reiterate our earlier point, a limited amount of coal / fossil fuels used as a backup to our renewable resources is actually a step towards achieving emissions reductions overall.
- 41. The Commission has also recommended setting a target of 50% of all energy consumed coming from renewable sources by 2035. We agree this target for energy overall would be more realistic and less costly than the 100% renewable electricity target. There are multiple routes to achieving 50% renewable energy, and we suggest coal has an ongoing role for a period of time in many of those.

## **Energy strategy**

42. We support the recommendation to develop a national energy strategy.



- 43. An energy strategy would provide the government an opportunity to explore alternatives to the Lake Onslow pumped hydro scheme as part of the New Zealand Battery Project. The government has committed to this project but there is merit in reviewing it in light of an energy strategy.
- 44. While it may be politically unpalatable, it is possible such a strategy would find limited coal has a future to reduce overall emissions in New Zealand.

### EMISSIONS REDUCTION PLAN SUBMISSION

## Sue Edmonds Farming and Science Writer



This submission will focus on Agriculture, Environment/Forestry and Transport.

#### **AGRICULTURE**

The average NZ farmer is continually encouraged to only look at what is on top of their soil, and every Government, in the quest for increased productivity and GDP, encourages this. Yet the enormous discoveries about soil life made in the last 20 or so years appear to be ignored, and these are not being taught even at Universities, much less to farmers. Thus, in this area of knowledge farmers are endlessly told about chemicals, but never told about the bacteria, mycorrhiza, mycelium and glomalin, or the animal residents of healthy soil which can grow more pasture, more crops, with both having high food values, than those only treated with chemicals, particularly nitrogen and phosphorus.

There is also little teaching about aggregation and infiltration, both of which have become much more important for all farms, given the drastic changes in weather patterns already occurring here. If there are no air/water spaces in soils, then rain dumps and droughts just produce runoff and compaction.

We need to stop our total economic focus on growth and exports, and begin focussing on how our agricultural and environmental practices can be changed to allow us to continue producing food for our citizens and others overseas when climate change effects on our weather and soils force a significant rethink too late for much useful change. If we begin by putting fostering and promoting soil life at the head of our lists, we can allow Nature to make the changes necessary (which she can do) to cope with the drastic weather which is already arriving.

The major reduction in chemical use could thus reduce methane, nitrous oxide and CO2 emissions from our agriculture, and even more if it could be accompanied by a halving of our dairy herds, so that we have real Level 5 condition cows, producing probably the same amount of milk, instead of endless skinny herds and low reproductive scores. My studies on methane have shown that it is the chemical N in the soil which aggravates the rumen methane production, and causes cows to drink more water which puts out more nitrous oxide in their urine.

It has yet to be proven by our science community whether regenerative farming done in NZ would succeed highly, as is claimed by overseas farmers, but surely it can't be worse?

## ENVIRONMENT/FORESTRY

Dairy farming on the Canterbury Plains saw all the hedges and trees removed, to make way for irrigators. What was grown there previously needed no such machinery, or water supplies, and the replacement of hedges etc would allow windbreaks to stop the winds from drying the soils, so that crops could be grown or smaller animals farmed, again with focus on soil life and infiltration.

The current rulings which allow rich companies to buy up land and plant pine forests is another example of governmental short term thinking. If we want to preserve the native wildlife (or at least those which can adapt to the changes in climate), then we have to plant natives on steep or unusable land. It's another example of not thinking 'growth' and just helping to build houses in China. Pine forests, grown to be harvested, not only house little native wildlife, but also create havoc with the mess left when felled. We need to stop thinking 'income' and start thinking about the continuation of life, including us, on Earth.

## **TRANSPORT**

Some of the Emissions Reduction Plan ideas on transport would be quite useful, but I remember a time when (I think Muldoon) temporarily brought in a ruling which allowed people to drive their cars on only 3 days a week. With a lot more people working from home, and the potential for ride sharing, we could cut down car traffic significantly.

I think the number of trucks currently on our roads is obscene, and I am sure that a measure of load sharing for some products could be sorted out. We need to move to a system where interdependencies are not only recognised, but promoted. Our current economic systems of growth, individualism and supposed total freedom to do what we want when we want, needs a total rethink. Even putting a lot more buses on our roads would require a considerable mind shift by much of the population.

I am currently doing a Zoom course from an outfit in Boston USA (Bio4Climate) on Ecological Economics. Much of its emphasis is on degrowth, and planning to long term and wide horizons, which take all of the possible reactions and repercussions into account. While recognising the enormous mind shifts required, both of government and corporations, I feel that New Zealand's power brokers will have to start thinking along these lines before the full impact of climate change, and its inevitable migrations are upon us.

Growth as a worldwide mantra has had its day. Let's make Survival the new one.

| From:    | svarn creswell                                    |
|----------|---|
| To:      | climate consultation 2021                         |
| Subject: | Submission to the draft Emissions Reductions Plan |
| Date:    | Friday, 19 November 2021 5:27:57 pm               |

## MFE CYBER SECURITY WARNING

This email originated from outside our organisation. Please take extra care when clicking on any links or opening any attachments.

Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

No, not unless it is limited to integrated planting of natives.

What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by landuse change into forestry?

The Government should limit offsetting using afforestation to integrated planting on riparian or erosion prone land within farming landscapes. This avoids the need for large interventions to alleviate the dislocation and unemployment from the current transition pathway.

What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

The returns for sequestering CO2 using pine are far too high, this needs to be much lower relative to natives. Natives sequester for longer, are not usually harvested for economic gain and do not pose risks such as fire or disease and should therefore by worth much more than what a pine tree can earn.

What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

The government should encourage integrated landscapes, the ETS could offer the chance to diversify the forest and farming sectors and make them fit for the future. Exotic to native transition should be limited to where there is evidence to support this occurring naturally given the likely issues in enforcing a landowners intention in 80 years' time. This option should not be available to existing production forests unless the land is unsuitable for harvest.

a. Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?

Yes. Carbon farming using fast growing exotics should be prohibited or extremely limited due to this land use being detrimental to communities and the economy. Any conversion of productive land to remove its ability to generate exports should be restricted to integrated landscape systems.

b. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

Integrated Landscape approaches should be permitted.

Decouple the price emitters pay and the returns that can be earned by

foresters.

Invest in native forestry research and development

Limit the amount in any region that can be converted

If we used more wood and wood residues from our forests to replace highemitting products and energy sources, would you support more afforestation? Why or why not

Only if this was cost effective and if afforestation was managed as part of integrated landscapes.

What role do you think should be played by:

a. Central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment

The government needs to fix the ETS.

Councils can help to guide an integrated landscape approach.

If the Government doesn't fit the ETS there will nothing councils can do quickly enough to limit the disaster.

b. The private sector in influencing the location and scale of afforestation?

Get the incentives right. Fix the ETS. End the gold rush and begin the restoration of New Zealand's farming and forest sectors with an enduring plan to shape these sectors for the next 100 years.

Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

Properly fund Predator free and actually get rid of pests, especially possums. Fund research and development. Ongoing pest and weed control should be a requirement for any forest (native or not) earning NZU's.

# From an iwi/Maori perspective, which issues and potential policies are a priority and why, and is anything critical missing?

ETS issues that apply to freehold general title land are different to issues which relate to maori land – the government should investigate this further.

Be mindful of re-colonizing maori land via alienation under the ETS. If a more permissive environment is adopted for maori land, how do we ensure maori owners are not carrying too much of the burden and are not left with even less productive assets in the future?

## Are there any other views you wish to share in relation to forestry?

The current scenario is making Landowners and foresters richand the community is paying for it. This must be remedied at source (policy and ETS settings) as tinkering with regulating the outcomes will not work.

Reports from both the Tararua, Wairoa and Tairawhiti highlight the dire consequences of continuing on the current path. Land prices have appreciated by 100 percent in three years in Tairawhiti alone.

How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?

Provide and warming target and reward farmers for cooling. These extension

services will emerge on their own once the goal becomes an appealing one.

a. How could the Government support the specific needs of Maoricollective land owners?

The above option would reward these farmers also.

What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

Acknowledge that cooling from agriculture is attainable and set this as the goal. The industry will pursue a goal that gives them back their mana and reflects the science.

Introduce a landscape approach to planting and integrate biodiversity, climate and freshwater goals.

# What research and development on mitigations should Government and the sector be supporting?

If cooling was acknowledged and ultimately rewarded, then the private sector would provide the drive to pursue this. Research in support of this approach already exists.

It is the single biggest thing that the government could do to mobilise the agricultural sector beyond shared goals of emission reduction.

How could the Government help industry and Maori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Lead the world in differentiating biogenic gasses from fossil gases and measure them appropriately in line with IPCC targets – which are <u>TEMPERATURE</u> <u>TARGETS</u> and change the narrative to pursuit of cooling. No other country in the world has yet claimed that narrative and can be supported by the science to achieve it. Our emissions profile makes this a very real and attainable goal for us. We would be foolish not to use it.

How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

Tools evolve and are developed in pursuit of lower inputs, higher returns or some combination of both - anything that runs counter to this will be barrier. Get the incentives right.

Are there any other views you wish to share in relation to agriculture? Measure warming. Use GWP\* for our targets and set the agriculture sector off in pursuit of 'cooling'.

New Zealand will reach warming neutral before 2040 if we continue on the current path, due to the proportion of our emissions profile that consists of biogenic methane – the New Zealand public and many politicians do not understand this, and it unequivocally would put us at the forefront of global progress on emissions.

The data in support of this is available from Professor David Frame, Lead author of chapter 6 of the latest IPCC report.

22 November 2021

Ministry for the Environment PO Box 10362 Wellington 6143

climateconsultation2021@mfe.govt.nz

Tēnā koe

# Tauranga City Council Submission: Te hau mārohi ki anamata | Transitioning to a low-emissions and climate-resilient future

Thank you for the opportunity to submit on the Emissions Reduction Plan discussion document. Please find enclosed our response and a summary below of key points.

#### Local context – Tauranga and the Bay of Plenty

Tauranga City Council ("the council") is a 'high-growth' council. Tauranga is New Zealand's fifth-largest city and is growing fast. Currently, 150,000 people call Tauranga home. Our city is projected to grow to almost 200,000 people by 2063. This is all occurring in a small harbour landscape with many physical constraints.

As a council, we experience a number of key challenges and competing priorities. For example, significant urban development pressures, a lack of housing supply, natural hazard considerations and substantial transport issues to name a few. Such competing issues require careful consideration and balance throughout the planning process and add to the complexity of achieving emissions reductions at a local, regional and national level.

#### Summary of key submission points

We acknowledge the importance of this document and the significance of preparing the first holistic emissions reduction plan for New Zealand. We would like to congratulate the Ministry for preparing this discussion document ("the document") and for engaging with New Zealanders about this important topic.

We believe local government is ideally positioned to partner with central government to reduce greenhouse gas emissions - to improve public transport networks, increase cycling and walking, create greener, low-emission neighbourhoods, and to minimise waste. This is a priority for the council, and we look forward to working closely with central government on these shared priorities in the future.

### Increased ambition

The council encourages greater ambition in the final Emissions Reduction Plan ("the Plan"). We are concerned that the current suite of planned policies suggested in the consultation document leave a large gap between expected reductions, and those required to meet the emissions budgets. There needs to be a greater focus on reducing emissions through domestic efforts, rather than accepting we will miss targets and need to buy international offsets. The council supports strong climate action and is ready to partner with the government on its emissions reduction efforts.

#### Lack of clarity and certainty

The document does not provide a clear enough direction for how New Zealand should reduce its emissions or provide the needed clarity for the council or our community to help guide development of that plan. Rather, the consultation document provides a list of current actions and policies (and lists potential options being explored by government), with little information about how actions will be implemented, or which should be prioritised.

Additionally, when the Plan is adopted, it will be without consultation on the detail, which may or may not be appropriate for the council or our community.

#### Local government's role in delivering the plan

Local government is ready and willing to take an active role in reducing emissions from its own operations and to support local communities to reduce their emissions. To achieve this, central government must provide the enabling polices, frameworks and incentives (as well as disincentives where necessary), that can drive national action and support local implementation. To achieve the pace and scale of change needed to reach our targets, we need a coordinated and aligned effort. Partnerships and clear roles and responsibilities will be vital.

Local government will be crucial to the successful implementation of many the proposed policies and actions in the document, especially the transportation, urban planning, waste, forestry, and just transition sections, and more detail on how this will occur, and on funding implications, is required in the final plan.

The council supports enabling national legislation which would enable all councils greater flexibility to introduce policies locally (including things like pricing, road reallocation, congestion charges etc.), to help address emissions in a way that would work for our communities.

### Funding

The document provides little detail on funding for key proposals and policies suggested to help reduce emissions. Without more certainty around funding commitments from central government, it is unlikely that local government or the private sector will have confidence to increase their own climate commitments.

Streamlining funding for initiatives such as cycleways would help empower local government to speed delivery of much needed infrastructure that will help decrease emissions. While it is crucial that funding is directed towards such initiatives which enable people to reduce their emissions, it is just as vital to stop funding things which will result in increased emissions. Further, as one of New Zealand's fastest-growing cities (and 5<sup>th</sup> largest city), we would like to see far greater funding for public transport in the future, in order to assist with emission reduction efforts.

#### Policy alignment

The Council would like to see greater co-ordination of policy direction across central government relating to emissions reduction. Presently there are seemingly conflicting outcomes sought from various policy statements on transport and urban development which impede real progress being made to reduce emissions. For example, enabling continued greenfield sprawl without requiring public transport links means people having to drive further and further to work which increases emissions and congestion. It's not clear enough in the consultation document how work on the emissions reduction plan is aligning with other

work programmes, in particular the reform of the Resource Management system, work on the National Policy Statement-Urban Development and development of the National Adaptation Plan.

## Planning

The form and location of residential development has a great influence on the long-term emissions from a city. Well-located residential intensification, for example around key activity centres, would enable people to more easily access their daily needs. Current moves for wholesale and distributed intensification could undermine the thoughtful location of people and so drive up emissions because of the increased need to travel (e.g. changes imposed by the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill).

In addition, encouraging intensification in locations known to be vulnerable to sea level rise or flooding, would ultimately result in greater risks for the community and greater levels of emissions when these buildings and infrastructure needed to be repaired or ultimately moved due to hazards.

Abolishing the need for green outdoor spaces around buildings will exacerbate flood risks, through the increase of impervious surfaces, add to urban overheating (as shade and greenspaces cool neighbourhoods), and is counter to restoring nature and supporting wellbeing in our cities.

The Government needs to be a leader in sustainable developments itself. Kāinga Ora has made good progress in its new developments, and more could be done to trial innovate new ideas in its developments.

## Transport

Most of the proposals to reduce transport emissions would be supported by local governments across New Zealand. The big issue is the lack of funding to make the changes required. There are also very few details on how the proposed transport emissions targets will be achieved. The government needs to work more closely with local government on the types of policies that are needed and provide far greater funding for implementing them.

Transport is another area which would benefit from clearer prioritisation of actions. A paradigm shift in the way the transport system is funded in New Zealand will also be required to enable the scale of change required.

In our more detailed response, the council also suggests that the appropriateness of vehicle kilometres travelled by cars and light vehicles as the headline or lead indicator needs further consideration.

### Prioritise actions and evidence-based decision making

The document does not prioritise actions or programmes of work, and only lightly touches on dependencies and the sequencing of activities. To build a robust programme government will need to identify which actions are able to deliver the greatest emission reductions, for the least cost and the greatest co-benefit. Identifying impactful actions and quick wins together with a clear view of dependencies and sequencing, will help to build momentum and confidence for implementation of the Plan.

Council also supports the principles proposed in this Plan, (e.g. for a just transition, to be evidence based, to be ambitious, to uphold Te Tiriti principles and promote co-benefits), however it is not clear how these lenses have, or will be applied.

#### Raising minimum standards

In 2020 the government declared a climate emergency. While we acknowledge the need for good public policy to include incentives and education to encourage 'better' voluntary choices, we believe higher regulatory standards are needed across a range of products to meet the urgency of the crisis.

Efficiency standards need to be regularly reviewed to ensure that standards are keeping pace with technical advancements, and the falling price of alternative products. Banning the sale of the highest emitting products, where comparative lower emitting products are available such as for F-gases, will also be needed to eliminate harmful and outdated products.

### Summary and contact information

We again congratulate the Ministry for your mahi in this vital area and thank you again for the opportunity to submit on the document.

We look forward to working with you, and other agencies, to continue to confront a number of challenging issues.

For matters relating to this submission, please contact Rebecca Maiden, Senior Sustainability and Climate Change Specialist.

Nāku noa, nā

Marty Grenfell **Chief Executive** Tauranga City Council

# Tauranga City Council response to Te hau mārohi ki anamata - Transitioning to a low-emissions climate-resilient future. Ministry for the Environment, New Zealand Government. November 2021

#### Introduction

Tauranga City Council ("the council") would like to acknowledge the importance of this document and the significance of preparing the first holistic emissions reduction plan for New Zealand. We would like to thank the staff involved in preparing this document and for engaging with New Zealanders about this important topic. We also congratulate the Government on the recently announced increase to the country's Nationally Determined Contribution (NDC). It is important that New Zealand plays its part in global efforts to reduce emissions and this higher target is more aligned to this, and the latest science from the Intergovernmental Panel on Climate Change.

We believe local government is ideally positioned to partner with central government to reduce greenhouse gas emissions – to improve public transport networks, increase cycling and walking, create greener, low-emission neighbourhoods, and to minimise waste. This is a priority for the council, and we look forward to working closely with central government on these shared priorities in the future. Our response will focus on the issues of most relevance to Tauranga, and to the council, and provides specific comment only on selected questions and recommendations. We also make a general endorsement of the Bay of Plenty Regional Council, Local Government New Zealand (LGNZ), Taituara, and Christchurch City Council submissions as the basis of some of our responses.

#### **Increased ambition**

The council encourages greater ambition in the final Emissions Reduction Plan ("the Plan"). We are concerned that the current suite of planned policies suggested in the consultation document leave a large gap between expected reductions and those required to meet the emissions budgets. There needs to be a greater focus on reducing emissions through domestic efforts, rather than accepting we will miss targets and need to buy international offsets. We believe that offsetting up to 66% of New Zealand's greenhouse gas emissions does not represent a fair or reasonable contribution to global efforts. Publishing a Plan that your own modelling estimates would miss the 7.7 Mt CO<sub>2</sub>-e reduction target by between 2.1 and 5.1 Mt CO<sub>2</sub>-e (i.e. miss the target by up to two-thirds) would do little to provide confidence to local government, the private sector, and the public, that the Government is committed to the changes necessary to address the climate emergency. The council supports strong climate action and is ready to partner with the Government on its emissions reduction efforts.

#### Lack of clarity and certainty

The consultation document ("the document") does not provide a clear direction for how New Zealand should reduce its emissions. The council awaited the release of this important document to help provide clear direction for New Zealand and to inform our efforts to reduce emissions. We are in the planning stages of our first Climate Action Plan and, unfortunately, the consultation document does not provide the needed clarity for the council or our community to help guide development of that plan. Rather, the consultation document provides a list of current actions and policies, and lists potential options being explored by government (most of which have already been consulted on by the Productivity Commission, Climate Commission and other agriculture, waste and transport consultations), with little information about how actions will be implemented, or which should be prioritised. Additionally, when the Emissions Reduction Plan is adopted, it will be without consultation on the detail of the Plan, which may or may not be appropriate for the council or our community.

#### Local government's role in delivering the plan

Local government is ready and willing to take an active role in reducing emissions from its own operations and to support local communities to reduce their emissions. To achieve this, central government must provide the enabling polices, frameworks and incentives (as well as disincentives where necessary), that can drive national action and support local implementation. To achieve the pace and scale of change needed to reach our targets, we need a coordinated and aligned effort. Partnerships and clear roles and responsibilities will be vital.

It is unclear who would be better placed than local government to help deliver on some of the major initiatives outlined in the discussion document. Partnering with iwi/Māori and the private sector are rightfully highlighted as important, but we believe that local government's role has not been sufficiently acknowledged. Local government will be crucial to the successful implementation of many of the proposed policies and actions in the document, especially the transportation, urban planning, waste, forestry, and just transition sections, and more detail on how this will occur, and on funding implications, is required in the final plan.

However, it seems that references to partnerships with local government are lacking and are almost written as an afterthought – where they are included at all. For example, the funding and finance section (p.35) could include reference to funding local government to (co)deliver projects or programmes in pursuit of the plan's goals.

The council supports enabling national legislation which would provide councils greater flexibility to introduce policies locally (including things like pricing, road reallocation, congestion charges etc.), to help address emissions in a way that would work for our communities.

#### Funding

The consultation document provides little detail on funding for key proposals and policies suggested to help reduce emissions – despite stating that 'climate change requires a step change in how we approach financing' (page 34). Without more certainty around funding commitments from central government, it is unlikely that local government or the private sector will have confidence to increase their own climate commitments.

It is noted that currently proposed policies will leave a significant gap between actual emissions reductions, and our international commitments (our NDC), which will require enormous amounts to be paid towards international offsets in the future (estimates of \$1billion per year quoted in media). We would prefer that central government invest a higher proportion of that money in New Zealand now to drive greater emissions reductions at home.

Streamlining funding for initiatives such as cycleways would help empower local government to speed delivery of much needed infrastructure that will help decrease emissions. Our experience in receiving shovel ready funding was much better than the process to access transport funding through Waka Kotahi which has unnecessarily long lead times, and funding is often not well-aligned with local (or national) emissions reduction goals.

While it is crucial that funding is directed towards initiatives which enable people to reduce their emissions (such as cycleways), it is just as vital to stop funding things which will result in increased emissions. For example, continuing to fund additional lanes on highways will not incentivise people to use their car less, or switch to public transport.

The council also notes that the recently released National Land Transport Programme 2021 to 2024, allocated \$2.8 billion for public transport in Auckland, \$1.2b for Wellington, \$246m in Christchurch, and only \$38m in Tauranga. As one of New Zealand's fastest-growing cities (and 5<sup>th</sup> largest city), we would like to see far greater funding for public transport in the future, in order to assist with emission reduction efforts.

#### **Policy alignment**

The council would like to see greater co-ordination of policy direction across central government relating to emissions reduction. Presently there are seemingly conflicting outcomes sought from various policy statements on transport and urban development which impede real progress being made to reduce emissions. For example, enabling continued greenfield sprawl without requiring public transport links means people having to drive further and further to work which increases emissions and congestion. Even the recent announcement to allow three storey residential units anywhere in the city is likely to lead to 'scattered intensification', which undercuts efforts elsewhere to focus intensification around integrated public transport routes. It's not clear enough in the consultation document how work on the emissions reduction plan is aligning with other work programmes, in particular the reform of the Resource Management system, work on the National Policy Statement-Urban Development and development of the National Adaptation Plan.

#### Planning

The form and location of residential development has a great influence on the long-term emissions from a city. Well-located residential intensification, for example around key activity centres, which have a diversity of work, retail, recreational and transport opportunities nearby, would enable people to more easily access their daily needs. Current moves for wholesale and distributed intensification could undermine the thoughtful location of people and so drive up emissions because of the increased need to travel (e.g. changes imposed by the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill).

In addition, encouraging intensification in locations known to be vulnerable to sea level rise or flooding, would ultimately result in greater risks for the community and greater levels of emissions when these buildings and infrastructure needed to be repaired or ultimately moved due to hazards. However, most of these areas should be addressed by the National Policy Statement – Urban Design Qualifying Matters.

Abolishing the need for green outdoor spaces around buildings will exacerbate flood risks, through the increase of impervious surfaces, add to urban overheating (as shade and greenspaces cool neighbourhoods), and is counter to restoring nature and supporting wellbeing in our cities.

The Government needs to be a leader in sustainable developments itself. Kāinga Ora has made good progress in its new developments, and more could be done to trial innovate new ideas in its developments.

#### Transport

Most of the proposals to reduce transport emissions would be supported by local government across New Zealand. The big issue is the lack of funding to make the changes required. There are also very few details on how the proposed transport emissions targets will be achieved. The Government needs to work more closely with local government on the types of policies that are needed and provide far greater funding for implementing them. Transport is another area which would benefit from clearer prioritisation of actions. Which actions will be most efficient (and cost effective) in reducing emissions, and how will they be implemented? A paradigm shift in the way the transport system is funded in New Zealand will also be required to enable the scale of change required. While the roll-out of essential low-emission transport infrastructure needs to be fast tracked, there needs to be an acknowledgement that we can't simply build our way out of this with a series of enormous and expensive infrastructure projects – many of which will do little to actually reduce our overall emissions.

Under the heading of 'Reducing emissions from transport infrastructure' it proposes the introduction of four transport targets. The first focus area aims to reduce the reliance on cars and supporting people to walk, cycle and use public transport. The measure proposed is to *"Reduce vehicle kilometres travelled (VKT) by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities."* 

Council suggests that the appropriateness of vehicle kilometres travelled by cars and light vehicles as the headline or lead indicator needs further consideration.

There are flaws with using VKT as a proxy for emissions. Firstly, it ignores improvements in vehicle fuel economy or the shift to electric vehicles. Secondly, VKT ignores any potential changes to fuel consumption and resulting emissions from changes in speed and congestion (i.e. improved fuel economy and reduced emissions can be achieved through reducing congestion).

To address this relationship between fuel economy and speed and overcome the limitations of a VKT-only KPI we suggest that either 'Total Carbon Emissions' [from the road transport network] or 'Vehicle Minutes Travelled' is used to complement the VKT KPI.

The reasoning for this is that VKT and VMT metrics together will more clearly show the relationship between congestion, speed, kilometres travelled and emissions – VKT alone can't do that.

#### Prioritise actions and evidence-based decision making

The Draft Emission Reduction Plan does not prioritise actions or programmes of work, and only lightly touches on dependencies and the sequencing of activities. To build a robust programme government will need to identify which actions are able to deliver the greatest emission reductions, for the least cost and the greatest co-benefit. Identifying impactful actions and quick wins together with a clear view of dependencies and sequencing, will help to build momentum and confidence for implementation of the Plan. Council also supports the principles proposed in this Plan, (e.g. for a just transition, to be evidence based, to be ambitious, to uphold Te Tiriti principles and promote co-benefits), however it is not clear how these lenses have, or will be applied.

#### Raising minimum standards

In 2020 the Government declared a climate emergency. While we acknowledge the need for good public policy to include incentives and education to encourage 'better' voluntary choices, we believe higher regulatory standards are needed across a range of products to meet the urgency of the crisis. For example, higher standards are needed for vehicle emissions, buildings, appliances and electronic equipment, waste and F-gases.

Higher minimum standards are required for products which produce greenhouse gas emissions (either directly like car exhaust emissions, or indirectly through electricity consumption), especially where there are lower emission options available at similar prices. More efficient products will save consumers money over time and reduce emissions.

Efficiency standards need to be regularly reviewed to ensure that standards are keeping pace with technical advancements, and the falling price of alternative products. For example, in the last decade the price has rapidly dropped for LED lightbulbs (which last much longer and use far less energy than incandescent bulbs). This now means consumers can replace old incandescent bulbs with LED bulbs and recover the additional purchase price from electricity bill savings in one year, while reducing their (and the country's) carbon footprint. Therefore, it may be time to set a date for ceasing the sale of inefficient incandescent lightbulbs.

Banning the sale of the highest emitting products, where comparative lower emitting products are available such as for F-gases, will also be needed to eliminate harmful and outdated products.

| Meeting the Net-Zero Challenge |   |  |
|--------------------------------|---|--|
| No.                            | Transition Pathway  | Response   |
| 1                              | Do you agree that the emissions reduction<br>plan should be guided by a set of principles? If<br>so, are the five principles set out above, the<br>correct ones? Please explain why or why not.                                   | We broadly support the principles for transition and support the inclusion of the principle that decisions be guided by an evidence-based approach. We do however note that a number of the proposals in the consultation document haven't yet been quantified. The document identifies that a number of proposals need further assessment for effectiveness, value for money and implications for other Government priorities.  |
|                                |   | We recommend principles that:  |
|                                |   | <ul> <li>are focused around making decisions as to the appropriate scale/level for action – national, regional,<br/>local. There needs to be consideration of how national policies trickle down into local action.</li> </ul>   |
|                                |   | <ul> <li>address working in partnership with local government, and making decisions that are guided by local<br/>perspectives, aspirations and objectives.</li> </ul>  |
|                                |   | <ul> <li>address the need for new policies to be supported by appropriate national level funding, and<br/>analysis of funding required at local/regional levels to support implementation.</li> </ul>  |
|                                |   | We also agree that an equitable transition that does not exacerbate existing inequalities must be at the centre of Government decisions on the emissions reduction plan.   |
| 2                              | How can we enable further private sector<br>action to reduce emissions and help achieve a<br>productive, sustainable and inclusive<br>economy? In particular, what key barriers<br>could we remove to support<br>decarbonisation? | The private sector requires certainty from government policies to give it the confidence to invest. The private sector will not want to shoulder the burden of transition without significant government support. The Government needs to significantly increase funding towards climate action, to signal it's a serious partner for private investors. Page 14 states 'no additional policies' under the Finance and Funding section – this will not build any confidence that the government is serious about increasing the investment to accelerate emissions reduction efforts. The New Zealand Emissions Trading Scheme (ETS) also needs to be reformed with a hard cap on units which match our emissions budgets. This will increase the price of units and make the private sector consider decarbonisation options earlier than if the Government artificially delays the pain of price increases on carbon polluting industries. |

|   |  | Government also needs to support and enable investment in facilities that promote decarbonisation. This includes reducing uncertainty and timeframes for establishing such facilities, particularly when considering the complexities of resource consenting. Currently resource consents are a barrier as the private sector is concerned that they will not obtain resource consents which can come at a considerable expense. To support this, for example, new organic recycling / recovery facilities that would ultimately remove methane from landfills could have a more supportive / permissive framework under the RMA (and new legislation).   |
|---|--|---|
| 3 | In addition to the actions already committed<br>to and the proposed actions in this document,<br>what further measures could be used to help<br>close the gap? | The Government needs to lead boldly and display some urgency. Delaying the emissions reduction plan<br>sends the signal that it's not really a government priority. Until the Government starts investing heavily in<br>renewable energy and low emission transport, and addresses agricultural emissions, the country will<br>continue to lock itself into a high emissions future. The percentage of renewable energy is actually dropping,<br>and the Government is still increasing funding for fossil fuel transport options at a higher rate than for active<br>and public transport. New Zealand is at risk of losing credibility as a leader on climate action, and we will<br>miss opportunities if we continue to prioritise other areas ahead of decarbonising the economy.  |
| 4 | How can the emissions reduction plan<br>promote nature-based solutions that are good<br>for both climate and biodiversity?                                     | Do more to incentivise permanent native forests as a way to sequester carbon and make it easier to enter<br>native regeneration into the ETS.<br>Additionally, explore alternative methods for sequestering carbon. While forestry is critical to long-term<br>emission reductions, forestry is susceptible to increasing fire risks, which are due to intensify each year as dry<br>conditions persist. The 2017 Port Hills fires in Canterbury and the 2019 Pigeon Valley fires in Tasman should<br>also serve as a warning of this (as well as the 2019-2020 Australian bushfires).<br>We recommend that the use of coastal sequestration be explored further (i.e., kelp farming, restoring<br>wetlands, etc.). For an island nation, this should be a leading nature-based solution in our Transition<br>Pathway. Other nature-based solutions with co-benefits for people and nature include the conservation and |
|   |  | regeneration of grasslands and mangroves. Converting land from pastoral farming to regenerative<br>agricultural practices will also be essential to Aotearoa's climate and biodiversity in a low-emissions future.<br>We believe this should be acknowledged as a vital nature-based solution in the Transition Pathway.<br>As forestry, coastal sequestration, and regenerative agriculture are challenging activities to undertake in<br>cities and urban regions, we also recommend that councils receive economic incentive to increase the tree<br>canopy of urban areas. Urban tree cover reduces pollution, cancels noise, boosts wellbeing, and even lowers<br>instances of neighbourhood violence. The ERP could set a target for increasing the tree canopy by a certain<br>percentage in all major New Zealand cities by an agreed upon date. For instance, the City of Montreal                             |

|   |  | (similar in population to Auckland) has committed to increasing its tree cover to 25% by 2025 and planting 500,000 trees by 2030 in its most recent Climate Plan. <sup>1</sup>   |
|---|--|--|
| 5 | Are there any other views you wish to share in relation to the Transition Pathway? | We broadly agree that a multi-sector strategy will help us move to the 2050 target. However, we are concerned that the consultation document doesn't yet include a comprehensive range of multi-sector options for addressing the issues and opportunities.  |
|   |  | Local government will play a pivotal role in the transition to zero carbon, and many of the actions to be<br>undertaken will have implications at the local level. We are concerned that this isn't reflected in the<br>document. There is little reference to the role that local government can and will play, and the support,<br>tools, resources and funding it needs to contribute to emissions reduction goals. In addition, to support<br>action at the local level, the Government should partner with local government (not just collaborate). |
|   |  | We believe that the Transition Pathway must:   |
|   |  | • Clearly identify roles and responsibilities within all emissions reduction activities. There must be a clear indication of who is responsible for reducing which emissions, outlining where central government leads vs. local government vs. joint responsibility.  |
|   |  | • Set accountability measures for local government to commit to. Staff in local government are often called to lead by central government's example, but they lack the framework to aspire towards. We ask that central government publish clear emissions targets for local government and how they will be held accountable (i.e., audits, reports, policy).   |
|   |  | The proposed vision must better reflect the need for resilient communities (given the inter-relationship between climate change mitigation and adaptation action).   |
|   |  | We acknowledge the need for a range of policy tools that enable New Zealand to mitigate the effects of climate change. However, new policy needs to complement existing emissions reduction tools, i.e. the New Zealand Emissions Trading Scheme (ETS).  |
|   |  | Further, the Transition Pathway states that:   |
|   |  | "Reducing emissions is crucial to achieve the vision for 2050: a productive, sustainable and inclusive economy where:  |
|   |  | energy and transport systems are accessible, affordable and sustainable"   |
|   |  | This bullet point should include "waste" alongside energy and transport to ensure the management of waste is still affordable and accessible for everyone. This is because the increased costs from the waste disposal   |

<sup>&</sup>lt;sup>1</sup> <u>https://montreal.ca/en/news/2020-2030-climate-plan-montreal-begins-planting-500000-trees-14848</u>

|   |  | levy, which we do support, could result in additional illegal dumping as the costs are passed onto consumers so there is still less incentive for the waste industry to support the diversion of waste from landfills.   |
|---|--|--|
|   | Other comments                             | We are concerned that it is not clear how work on the Plan is aligning with other work programmes, in particular the reform of the resource management system, work on the National Policy Statement for urban development and development of the National Adaptation Plan.  |
|   |  | It's critical that there's alignment between the ERP and the proposed new National Planning Framework, which we understand could include direction around reducing emissions through land-use planning decisions.  |
|   |  | We encourage the Government to think about what tools are made available to local government and communities to support integrating consideration of emissions into land use planning decisions. These tools should be designed with local government.   |
|   |  | It's important that work to reduce emissions aligns with work to build communities' resilience to the impacts of climate change. Recycling of revenues from the ETS to support adaptation/resilience action is one way in which alignment could be achieved. Institutional arrangements could help to ensure that communities are able to access the funding they will need for adaptation. Institutional arrangements must also enable adaptation action to be well-prioritised and planned to address priority risks. These suggestions should be looked at in the context of the work the Government is doing concurrently to design a managed retreat framework/adaptation fund/Climate Change Adaptation Act. We are encouraged by signals from the Government that this work is being looked at. |
|   |  | Clarity around how the Government is seeking to manage trade-offs would be helpful – for example, what is the Government's position around how trade-offs between growth and urban development and complying with environmental limits (including emissions reduction targets) should be managed?  |
|   | Helping sectors adapt                      |  |
| 6 | Which actions to reduce emissions can also | Role of local government   |
|   | effects of climate change?                 | As well as working in partnership with iwi/Māori the Government needs to work in partnership with local government to deliver mitigation action at the local level – although the ERP is a national plan, it will be delivered and have implications locally and regionally.   |
|   |  | Working with local government will help the Government to understand the level at which various levers are best applied – local, regional, national. Any guidance for local government should be developed in partnership with the sector – we recommend you work with LGNZ and Taituarā to do this.   |

| Local government's proximity to communities means it's well-placed to help drive and influence some of the<br>behaviour change that is needed. It also means local government is well-placed to help the Government<br>understand the inequities that may result to local communities from the transition and how they can be<br>supported through that transition.<br>Guidance on how to factor climate change into business cases/decisions on business cases and investment<br>decisions would be useful. |
|--|
| The consultation document fails to address a number of the recommendations in the Climate Change Commission's Final Advice on enabling local government to make effective climate change mitigation decisions:   |
| <ul> <li>Recommendation 8 – that the Government commit to "aligning policy and investments to enable<br/>local government to make effective decisions for climate change mitigation and adaptation. This<br/>should include aligning the Local Government Act, the Building Act and Code, the Resource<br/>Management Act (RMA), national direction under the RMA, proposed RMA reforms and the<br/>infrastructure plan."</li> </ul>   |
| <ul> <li>Recommendation that the Government implement funding and financing mechanisms that<br/>provide adequate funding to enable local government to take action aligned with ERPs (and<br/>implementation of climate adaptation plans).</li> </ul>  |
| <ul> <li>A recommended provisional progress indicator for the Government "to have, by 30 June 2022, published an agreement that sets out the mechanism for achieving the necessary alignment between central and local government" and that by December 2022 the Government publishes a work plan outlining how alignment and funding will be addressed, with milestones for achieving the plan.</li> </ul>  |
| We support each of these recommendations and encourage the Government to reflect them in the ERP/its work to develop the ERP.  |
| Funding needs to be made available to councils to support mitigation action with/by our community. The following considerations should be taken into consideration when designing the fund:  |
| • Adequacy of funding is important, but appropriate timeframes for funding is also important.  |
| <ul> <li>Need to avoid a funding 'lolly scramble'. But contestable funding doesn't provide the<br/>predictability that helps with planning.</li> </ul>   |
| <ul> <li>Funding will likely need to be scaled to reflect the many different starting points councils will be<br/>at.</li> </ul>   |

|  | <ul> <li>Consider a base amount of funding for each council, with contestable top-ups. Any additional<br/>funding should be underpinned by a good business case.</li> </ul>   |
|--|---|
|  | <ul> <li>Need to strike the right balance between funding for national priorities carried out locally vs local<br/>priorities.</li> </ul>   |
|  | • Do further analysis to understand what the funding demands are within different councils.   |
|  | <ul> <li>Prioritise projects that will generate the most emissions reductions but need to balance this<br/>against equitable transition considerations.</li> </ul>  |
|  | The Climate Change Commission warned that cost pressures are likely to grow as local authorities respond to climate change and expressed a view that local authorities would need central government funding to manage the transition. Therefore, it's important that work on the ERP stays abreast of the work the Future for Local Government Panel is doing to look at funding and financing of local government.  |
|  | <ul> <li>Transport</li> <li>We support actions to incentivise low-emissions transportation between regions. Many New Zealanders fly short distances between cities multiple times per year, leading to significant emissions. Options for low-emissions commuting between regions should be explored further in the ERP (i.e., passenger rail).</li> <li>We support actions to incentivise low-emissions transportation in urban areas through low-fare public transportation and improved cycle ways.</li> </ul> |
|  | Energy and Industry   |
|  | <ul> <li>We support phasing out the use of fossil fuels as rapidly as possible. We support the exploration of offshore renewable energy.</li> </ul>   |
|  | <ul> <li>Building and construction</li> <li>We believe that all plans in Building and Construction must come hand in hand with policy and regulation around construction &amp; demolition waste.</li> </ul>   |
|  | Agriculture   |
|  | - We must prioritise agricultural practices that place an emphasis on soil health, biodiversity, and resilience. This reframing aligns with a Māori worldview of land stewardship. We are not comfortable with the Plan's concern for "the productivity and profitability of some parts of the [agriculture]  |
|  | productivity and profitability over other factors.  |

|   |  | <ul> <li>While agriculture accounts for most of Aotearoa's emissions, we are concerned that the climate risks our current agriculture model presents (as well as the plans that Government is undertaking to mitigate these risks) are not sufficiently communicated.</li> <li>Communication and behaviour change must be a leading action for Government in this sector to promote climate-friendly food choices among New Zealanders.</li> <li>Waste         <ul> <li>The ERP must acknowledge that waste is not a homogenous issue and will have different solution pathways for reducing household waste, commercial waste, construction &amp; demolition waste, and</li> </ul> </li> </ul> |
|---|--|---|
|   |  | <ul> <li>production waste.</li> <li>Forestry         <ul> <li>We believe that native forests are the best path forward for forestry projects. As mentioned above, we think other ecosystems that present nature-based solutions should also be considered: grasslands, mangroves, wetlands, and other forms of coastal sequestration.</li> </ul> </li> </ul>  |
| 7 | Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?   | No response   |
|   | Working with our Tiriti partners   |   |
| 8 | The Climate Change Commission has<br>recommended that the Government and<br>iwi/Māori partner on a series of national plans<br>and strategies to decarbonise our economy.<br>Which, if any, of the strategies listed are a<br>particular priority for your whānau, hapū or<br>iwi and why is this? | No response   |
| 9 | What actions should a Māori-led transition<br>strategy prioritise? What impact do you think<br>these actions will have for Māori generally or<br>for our emission reduction targets? What<br>impact will these actions have for you?   | Actions which focus on building capacity, increase funding opportunities, and reduce inequities for Māori should be prioritised.  |

| 10 | What would help your whanau, community,<br>Māori collective or business to participate in<br>the development of the strategy?  | More resourcing would help Māori participate in the process. Māori at local authority/regional level have little/no capacity to engage, partner, co-design or collaborate with local/regional authorities primarily because of that lack of resourcing (funding, capacity, inequities). Whatever is developed nationally to support, and resource Māori must be replicated at local level. Notwithstanding these fundamental flaws, Maori-led, or Māori specific and affordable strategies <u>must be driven</u> on a 'by Māori for Māori' context with aligned support mechanisms from national and local/regional authority levels. The Te Ao Māori perspective is equally important to the sciences and technical viewpoint, and when combined, new possibilities emerge for the willing. |
|----|--|--|
| 11 | What information would your Māori<br>collective, community or business like to<br>capture in an emissions profile? Could this<br>information support emissions reductions at a<br>whanau level?  | Whilst there is a focus here on outcomes specifically for Māori, there are, under a true Te Tiriti partnership,<br>mutually beneficial economic, leadership and kaitiaki obligations to realise for all.   |
| 12 | Reflecting on the Commission's<br>recommendation for a mechanism that would<br>build strong Te Tiriti partnerships, what<br>existing models of partnership are you aware<br>of that have resulted in good outcomes for<br>Māori? Why were they effective?  | In acknowledging the intent of the Crown to embed Te Tiriti o Waitangi principles into future emissions reduction plans, the Crown must give clear guidance to local authorities as to what obligations this imposes at local/regional authority level when planning and delivering localised strategies, particularly in respect to the level of resourcing (funding) that a local/regional authority is expected to provide to assist Māori to partner, engage and continue collaboration throughout planning and implementation. Similarly, local/regional authorities need to be ready to change the way they do business to incorporate a broader partner base, but particularly toward accepting the roles and obligations of working as partners and collaborating with Māori.        |
|    | Making an equitable transition   |  |
|    | Equitable Transitions Strategy   |  |
|    | The Commission recommends developing an Equitable Transitions Strategy that addresses the following objectives: partnership with iwi/Māori, proactive transition planning, strengthening the responsiveness of the education system, supporting workers in transition, and minimising unequal impacts in all new policies. |  |
| 13 | Do you agree with the objectives for an<br>Equitable Transitions Strategy as set out by<br>the Climate Change Commission? What<br>additional objectives should be included?  | We agree with the objectives of the Equitable Transition Strategy as described. However, we consider that developing the Equitable Transition Strategy separately from the Emissions Reduction Plan potentially allows a Plan to be developed which is inconsistent with the goals of an equitable transition.   |
|    |  | The Emissions Reduction Plan should have an equitable transition as one of its core principles – and all actions and policies included in the Plan should also have been considered through that lens before being included. Pathways or policies that undermine an equitable transition should not be included.  |
|----|--|---|
| 14 | What additional measures are needed to give<br>effect to the objectives noted by the Climate<br>Change Commission and any other objectives<br>that you think should be included in an<br>Equitable Transitions Strategy? | There also needs to be regular monitoring and reporting on the impacts of the transition, to ensure the actual real-world impacts are assessed, and our approach can be constantly improved for affected communities and sectors.   |
|    | The Commission suggests that the Equitable Tra<br>development agencies, businesses, workers, un  | nsitions Strategy should be co-designed alongside iwi/Māori, local government, regional economic ions, the disability community and community groups.   |
| 15 | What models and approaches should be used<br>in developing an Equitable Transitions<br>Strategy to ensure that it incorporates and<br>effectively responds to the perspectives and<br>priorities of different groups?    | We agree the Equitable Transition Strategy needs to be created in partnership with Māori, but also needs to include input from all sectors of society to be effective. The more views it incorporates, the more effective it will be for society as a whole.  |
|    |  | We believe that behaviour change documents developed for the Equitable Transition Strategy must be published in the relevant languages of all communities that live in low-income areas. As these diverse populations are at the centre of the transition, all documents must be designed in a manner that is inclusive and celebratory of all cultures.  |
|    |  | We further believe these behaviour change initiatives must be run in partnership with local government as well as local organisations.  |
|    |  | We support the Government's adoption of the Just Transition model and believe it should guide the work in developing an Equitable Transitions Strategy.   |
|    | Other actions  |   |
| 16 | How can Government further support<br>households (particularly low-income<br>households) to reduce their emissions<br>footprint?   | Provide easy to understand information on where most emissions come from and a few basic (and affordable) things people can do to reduce their footprint.   |
|    |  | But most importantly, the Government is in the unique position of being able to provide or fund low-<br>emissions alternatives for the public. For example, incentives for active travel (e.g. electric bikes for each<br>household), or funding public transport improvements or cycleways which provide people low-emission<br>alternatives to driving fossil fuel vehicles. Decarbonising the electricity grid is another action which would<br>enable families to lower their carbon footprint. |

|   |  | Further we suggest that Government create strategies to make climate-friendly food choices and foods that come free of packaging the most affordable choice. Low-income households (pending implementation of some of the recommendations above) may have limited choices to change their transportation, housing, or energy emissions, but there are several ways to ensure their daily meals and subsequent food-related waste come with a lower footprint. |
|---|--|---|
| 17  | How can Government further support workers<br>at threat of displacement to develop new skills<br>and find good jobs with minimal disruption? | Requesting the Regional Skills Leadership Groups to specifically consider the effects of climate change and emissions reduction targets on the local workforce. The Bay of Plenty RSLG has incorporated the following statement into its draft aspiration statement "The Bay of Plenty embraces the impacts of climate change on employment and has a focus on emerging Circular Economy initiatives to drive future success".                                |
|   |  | Continue to invest in place-based skills and employment hubs that have a direct connection with local job-<br>seekers and employers. Priority One's (EDA) Ara Rau skills and employment hub in Tauranga has helped 185<br>people into employment over the last 10 months, with a focus on rangatahi Māori NEETs, youth and women.   |
|   |  | Encourage development of micro-credentials which help people to upskill quickly and enable them to gain good alternative employment with minimal disruption.  |
|   |  | Provide free training, and boost apprenticeships for new low-emission jobs.   |
| 18 What additional res<br>information are nee<br>community transition | What additional resources, tools and information are needed to support   | Community based approaches will be required in areas where employment is dominated by high emission industries.   |
|   | community transition planning?   | The Government may need to incentivise suitable low-emission firms to locate to regions where there will be high employment needs.  |
|   |  | As mentioned above, Government must also ensure that all resources, tools, and information come published in the relevant languages of all communities that live in low-income areas.   |
|   |  | Government must be ready to work in partnership with community groups that are already active in these areas and collaborate on community-focused and culturally relevant education campaigns.  |
| 19  | How could the uptake of low-emissions  | Incentives could be provided for businesses that rapidly transition to low-emission alternatives.   |
|   | business models and production methods be best encouraged?   | Greater support could also be provided to social enterprises which focus on helping the transitions to a low emission, circular economy.  |
|   |  | Government may choose to encourage businesses to participate in networks such as the Sustainable<br>Business Network and B Corp New Zealand and make use of their sustainable frameworks and resources.   |

|    |  | Government could consider funding the first submission fee for a business pursuing B Corp certification. The B Corp certification verifies that a business has considered the impact of their decisions on their workers, customers, suppliers, community, and the environment. So far, 45+ businesses in Aotearoa are B Corp certified. <sup>2</sup>  |
|----|--|--|
| 20 | Is there anything else you wish to share in relation to making an equitable transition?  | The consultation document refers to empowering urban and rural regions and communities to transition in<br>line with local objectives and aspirations. This is where partnership with local government becomes critical:<br>local government knows what those objectives and aspirations are and is best placed to know how to<br>support communities to realise them.   |
|    |  | The impacts of the transition will vary across the motu – local government is well-placed to understand and advise the Government of these impacts   |
|    |  | We suggest that any plans and budgets to support businesses and households in an equitable transition should also consider that Aotearoa is likely to welcome more climate refugees from overseas in the coming decades.   |
|    |  |  |
|    | Aligning Systems and Tools   |  |
|    | Government accountability and coor   | dination   |
| 21 | In addition to the Climate Change Commission<br>monitoring and reporting on progress, what<br>other measures are needed to ensure<br>government is held accountable?   | It is vital that all government departments / agencies are required to produce emission reduction plans that align with NZ emission budgets and targets. For example, the Ministry of Transport released a discussion document earlier this year proposing four potential options to reduce transport emissions – yet three of the four options were insufficient to meet its own targets. Such plans should no longer even be considered. |
|    |  | levels of government must be accountable for. We suggest that all levels of government, both central and local, be mandated to report their emissions inventories on an annual basis.  |
| 22 | How can new ways of working together like<br>mission-oriented innovation help meet our<br>ambitious goals for a fair and inclusive society<br>and a productive, sustainable and climate-<br>resilient economy? | Mission oriented goals enable innovative ideas to solve complex problems. We support this approach as it allows a number of options to be explored without pre-determining the types of actions which would best achieve the goal, opening new opportunities and pathways.   |

<sup>&</sup>lt;sup>2</sup> <u>https://www.bcorporation.com.au/</u>

| 23 | Is there anything else you wish to share in relation to government accountability and coordination? | It is vital that we have an ambitious, coordinated and aligned whole-of-government response to climate change. Climate change will affect every ministry in some way, so enabling frameworks, capability building, and tools are needed to help ministers and staff across the different ministries to adopt consistent approaches. These approaches should be shared so regional and local government and business sectors may also benefit (for example procurement guidelines, cost benefit analysis, decision support tools and monitoring and reporting approaches). The council fully supports central government leadership shown through the Carbon Neutral Government Programme. This will have numerous benefits and will be an important catalyst for business through government procurement and contracting efforts. |
|----|---|---|
|    |   | We recommend that introducing Vote Climate Change (as recommended by the Climate Change<br>Commission) is one way that Government accountability and coordination could be achieved. The<br>consultation document is virtually silent on the measures the Government is considering for supporting its<br>implementation of/accountability for the ERP.   |
|    |   | We agree emissions pricing plays an important role, as does funding and financing. Further work needs to be done to identify how ETS revenue could be recycled and what institutional arrangements could be put in place to ensure that this is used to fund critical climate change adaptation/resilience action, and to support an equitable transition.  |
|    |   | Behaviour change is important and local government can play a role in supporting this given its proximity to communities. Understanding the barriers to changing behaviour and designing programmes around these will ensure that funds are appropriately spent, and there is increased likelihood of achieving favourable outcomes.  |
|    |   | Coordinated consultations with local government, iwi/Māori, business and communities would be helpful.<br>Throughout 2021 alone we've seen consultations on a number of work programmes that have emissions<br>reduction focused goals: Transport Emissions Reduction Plan, Infrastructure Strategy, Building Code update<br>etc. It is important that all of these work programmes are aligning, and are aligning with the ERP.  |
|    |   | We request that all emissions tools that Government develops must consider food-related emissions.  |
|    |   | <ul> <li>Given that many businesses cater employee lunches, private corporate events, public functions that offer catering, and other activities that are centred around food, we are concerned that the Climate Action Toolbox developed by the Sustainable Business Network with support from Government does not mention food emissions at all.</li> </ul>   |
|    |   | <ul> <li>All government tools must be accountable for putting forward complete, transparent, and accurate<br/>information on how dietary choices affect household and business emissions. Encouraging climate-</li> </ul>   |

|    |  | friendly food choices cannot be viewed any differently than encouraging the use of low-emissions transportation or low-emission business operations.  |
|----|--|---|
|    |  | Government-funded facilities should offer climate-friendly food choices as the top menu option.   |
|    | Funding and Financing  |   |
| 24 | What are the main barriers or gaps that affect<br>the flow of private capital into low-emissions<br>investment in Aotearoa?        | Lack of incentives from the government for investing in low-emission solutions, combined with those who continue to invest in high emitting sectors being effectively sheltered from the true costs of the harm they perpetuate through high emissions. If the costs of pollution don't fall on polluters (or investors), they will be less willing to change. If it is cheaper to simply purchase offsets at an artificially low price than to pay for the true cost of emissions, businesses are unlikely to be pro-active in reducing their emissions. |
|    |  | Currently the government is focusing all its offsetting efforts towards forestry. However, offsetting using projects that reduce emissions, significantly increases the number of opportunities to limit domestic emissions.  |
| 25 | What constraints have Māori and Māori<br>collectives experienced in accessing finance<br>for climate change response activities?   | No response   |
| 26 | What else should the Government prioritise in directing public and private finance into low-<br>emissions investment and activity? | Government needs to lead the way by clearly showing where it intends to invest and inviting others to join it.<br>Otherwise it needs to provide incentives (e.g. tax, subsidies etc.) to make investment in low-emission<br>technology more attractive than continued investment in high emissions industries.  |
| 27 | Is there anything else you wish to share in relation to funding and financing?   | On page 34, the opening statement on Funding and Financing is that 'Climate change requires a step change<br>in how we approach financing', and yet no new policies for funding are provided in the document. The<br>summary on page 14 simply states the Emissions Reduction Plan will reflect work currently underway.<br>Funding and Financing will ultimately underpin the entire effort to reduce emissions in New Zealand, so this<br>approach is unlikely to lead to significant change in the public or private sector.                           |
|    |  | We believe that certain Government strategies could remove barriers for low-emissions businesses to expand their reach (i.e., refill store chains, natural fibre clothing brands, repair shops, etc.). Strategies could include subsidising the cost of rent and/or employee wages. Māori-owned and low-emissions business could be supported so that they are not forced to compete with large conglomerates.  |
|    |  |   |

|    | Emissions Pricing   |   |
|----|---|---|
| 28 | Do you have sufficient information on future<br>emissions price paths to inform your<br>investment decisions?   | No - local government does not have sufficient guidance on price expectations and so is less able to take this<br>into account in decision making. We support the submission recommendation from Taituarā, which calls for<br>'the publication and regular review of long-term abatement values based on the price of carbon' to help local<br>government and others inform their investment decisions. |
|    |   | As an example, current government estimates and guidance appears to be outdated, because the price is currently higher than the forecasts and forecasts vary greatly (e.g. Parliamentary Commission for the Environment medium ambition \$50 per tonne CO2-e, MFE upper range \$50 per tonne CO2-e, yet the current NZ price is \$65 per tonne CO2-e from CommTrade).                                   |
| 29 | What emissions price are you factoring into your investment decisions?  | Local government needs better decision support tools and cost benefit analysis tools, to more consistently factor in the future cost of carbon and climate implications of decision-making. This is especially needed when long-term investments are being made. For cost effective delivery, these tools could be developed nationally and then shared throughout New Zealand.                         |
| 30 | Do you agree the treatment of forestry in the<br>New Zealand Emissions Trading Scheme (NZ<br>ETS) should not result in a delay, or reduction<br>of effort, in reducing gross emissions in other<br>sectors of the economy?  | We agree that gross emissions reductions should be the focus of government policy, with offsets from forestry only used for residual emissions in hard to abate sectors.  |
| 31 | What are your views on the options presented<br>above to constrain forestry inside the NZ ETS?<br>What does the Government need to consider<br>when assessing options? What unintended<br>consequences do we need to consider to<br>ensure we do not unnecessarily restrict forest<br>planting? | We agree that there should be limits introduced for the number of forestry units surrendered from non-<br>forestry participants under the ETS.<br>Increasing the value of units for permanent native forest compared to exotic forestry may also incentivise<br>more long-term sequestration.   |
| 32 | Are there any other views you wish to share in relation to emissions pricing?   | Government control of the emissions price in New Zealand is not letting the market adequately reflect and respond to the true price of carbon. For a market mechanism to work it needs to be determined by the market place. We suggest removing the artificial ceiling on the New Zealand carbon price to help drive innovation and a low emission economy.  |

|  | Planning  |  |
|--|---|--|
| 33    <br>   <br>   <br>   <br>   <br>   <br>   <br>   <br>   <br> | In addition to resource management reform,<br>what changes should we prioritise to ensure<br>our planning system enables emissions<br>reductions across sectors? This could include<br>partnerships, emissions impact quantification<br>for planning decisions, improving data and<br>evidence, expectations for crown entities,<br>enabling local government to make decisions<br>to reduce emissions. | The Emissions Reduction Plan Discussion Document notes that the extent of the current emissions impact of urban areas is unknown (p.42). We would strongly advise that this data is collated, so that impacts of intensification on emissions profiles can be better understood and addressed.   |
|  |   | The Emissions Reduction Plan should also contemplate measures to reduce and/or offset emissions that are created as part of the drive for increased residential intensification.   |
|  |   | One way that it could do this is through the promotion or protection of green space either by private property owners or by local government. We know that intensification of residential properties often comes at the expense of existing green space and green assets e.g. trees, with limited/no requirement to reinstate or replace these meaningfully. Proposed changes as part of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill will further reduce the need for landscaping from a minimum of 20% of site coverage to no minimum.                                   |
|  |   | A sole focus on housing growth can result in poor social, environmental and economic wellbeing outcomes.<br>Poorly planned and rapid greenfield expansion locks in a legacy of high input and high footprint,<br>neighbourhoods and homes. Development must be integrated with transport and infrastructure and be<br>designed to reduce the need for private vehicles (e.g. 15 minute neighbourhoods and growth in areas with<br>existing infrastructure and around key activity centres).  |
|  |   | Applications for resource consents that have a low-carbon footprint or are associated with decarbonising processes (i.e. organic waste recovery facilities) should be supported with a significant positive weighting in planning assessments.   |
|  |   | Local government could be provided with the opportunity to withhold Building Consents and Code of<br>Compliance Certificates (CCC) under the Building Act by requiring that all construction and demolition<br>activities are required to provide Waste Management Plans. These Plans would demonstrate what waste will<br>be produced and where it will be reused, recovered, recycled or disposed and would need to be assessed<br>and reported on and results provided to Council prior to issuing of the CCC to confirm all waste that can be<br>reduced, reused, recovered has been diverted from landfill. |
|  | What more do we need to do to promote<br>urban intensification, support low-emissions<br>land uses and concentrate intensification<br>around public transport and walkable<br>neighbourhoods?   | The Government's drive for increased residential intensification is understood. More work needs to be done to understand the impacts on emissions – as above, the data is not yet well understood.   |
|  |   | The recently announced Resource Management (Enabling Housing Supply and Other Matters) Amendment<br>Bill will, if enacted, enable increased residential density of up to three houses, of up to three storeys, on<br>single sections across Tier 1 urban areas. Where previously councils focused increased residential density<br>around public transport corridors and within walking distance of key activity centres, the blanket city-wide  |

|    |  | approach proposed in the Bill will lead to new development away from public transport and key activity centres, contrary to the goals of increasing public and active transport uptake and reducing emissions.   |
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|    |  | To be more efficient and consistent, we encourage the development of national tools and approaches that can help decision making at the local level (e.g. tools that help understand the environmental footprint of urban development decisions). One such tool (Envision Scenario Planning Tool) has been developed by Canterbury University through the National Science Challenge – Better Homes Towns and Cities programme.  |
|    |  | We support the inclusion of pedestrian-only streets in inner city districts (as in Christchurch's Central City) as<br>well as the implementation of more bike-share systems in new urban developments. Docked shared bike<br>systems may present a better solution than dock-less bikes which often "pollute" footpaths. Urban areas<br>may also benefit from car sharing and other smart transport options.   |
|    |  | We support congestion charges for all urban areas and more solutions to reduce the number of single-<br>occupancy vehicles.  |
| 35 | Are there any other views you wish to share in relation to planning? | The Discussion Document emphasises a need for a joined-up approach between central and local government to decrease emissions (p.18, p.57): "To get started, we need to empower central and local government, iwi/Māori, communities and business to collaborate on a multi sector approach to reducing emissions" (p.18).   |
|    |  | However, it is clear that there are overlapping objectives between the emissions reduction programme and<br>other key work underway such as the programme of Resource Management Act reform; National Policy<br>Statement on Urban Development; and the recently announced changes to medium density as part of the<br>Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill.   |
|    |  | Further work is needed to explore and resolve the apparent tensions in national direction and policies. The Council recognises that there are challenges in achieving multiple objectives: greater understanding of how these policies will integrate is needed. For example, actions to increase housing supply by building up and out can create a tension with actions to reduce greenhouse gas emissions and protect productive land, if urban areas sprawl outwards. In addition, direction to intensify existing residential areas can come at the expense of trees and greenspace – key assets in the pursuit of emissions reduction. |
|    |  | The Government needs to provide strong support for local government decisions on land use and transport/infrastructure integration, for example by prohibiting urban development outside of designated growth corridors and addressing housing pressures first and foremost through increased density.   |
|    |  | We need to consider the emission and resilience implications of planning decisions and the potential for low carbon adaptation options. Designing infrastructure with both an adaption and resilience lens will be more cost effective. We have concerns regarding the scale of reform proposed to the planning system, and the  |

|    |  | possibility that the reforms will not have the transformational impact that the Government is aiming to<br>achieve. We agree that more high and medium density housing is a way to contribute to emissions<br>reductions. But this needs to happen in partnership between central and local government and needs to be<br>supported by adequate funding for infrastructure.   |
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|    |  | Page 42 of the consultation document notes, "We do not know the total emissions contribution of urban<br>areas. We need to develop a way to measure the emissions associated with urban development decisions."<br>We agree with this and urge the Government to do this in partnership with local government. This should<br>incorporate the likely lifetime emissions of transport and energy use that would be enabled under different<br>scenarios, and embodied emissions in buildings and infrastructure. Emissions impacts could then inform<br>strategic, spatial and local planning and investment decisions and drive emissions reductions. |
|    |  | The consultation document refers to the Government requiring transport emissions impact assessments for urban developments and for these to be factored into planning decisions, with requirements to avoid, minimise and mitigate transport emissions impacts. While we support this in principle, the issue is how these assessments are going to be supported and funded. What tools can be made available to support local government to undertake consistent and cost-effective assessments? Any tools should be developed in partnership with local government.   |
|    |  | We suggest that all new urban developments include targets around the inclusion of carbon-sink green spaces (i.e., parks with diverse native plants, community gardens, green walls, etc.). Minimise establishing "green grassy spaces with a playground". Rather, incorporate the playground so these green spaces have multiple uses, including, as carbon-sinks, stormwater management, shading, and recreation. We also suggest that any new urban development make provisions for community hubs that would include upcycling/repair centres (i.e., tool libraries) and community gardens.   |
|    | Research, science and innovation                                   | -   |
| 36 | What are the big challenges, particularly                          | Data, both private and public data required to inform and stimulate ideas.  |
|    | around technology, that a mission-based approach could help solve? | Attracting the right people into the mission; these need to be a combination of both public and private sector – but let industry lead, supported by government.  |
|    |  | This cannot just be the same players – ensuring this is not only Wellington focused, the regions need to be empowered.  |
|    |  | There needs to be an open knowledge base.   |
|    |  | Rapid prototyping should be promoted, and successful initiatives scaled. De-risk the environment.   |

|    |   | We caution that "low-emissions animal breeding" is listed as an area of research to approach agricultural emissions. It is evident that we cannot sustain our current levels of animal breeding, even with new methods of farming. The IPCC has described plant-predominant diets as a major opportunity for mitigating and adapting to climate change and includes a policy recommendation to reduce meat consumption. <sup>3</sup> Given this important avenue for reducing emissions, we believe Government must equally allocate funding in research, science, and innovation toward encouraging climate-friendly food choices (also can be called plant-predominant, plant-rich, and planet-based diets). |
|----|---|--|
| 37 | How can the research, science and innovation<br>system better support sectors such as energy,<br>waste or hard-to-abate industries?   | Required at a regional level. Research, science and innovation to support local government and economic development agencies who have the knowledge and the relationships at a regional level. Government should support and incentivise trials of new waste processing facilities, especially as these facilities can have significant upfront costs. If the trials prove successful, promote and provide support for fast-tracking them to scale.  |
| 38 | What opportunities are there in areas where<br>Aotearoa has a unique global advantage in<br>low-emissions abatement?  | Green power, hydro power.<br>Geographic variances allow us to trial different approaches.<br>Aotearoa's size supports rapid delivery and accelerated innovation.<br>City and regional councils have the opportunity to collaborate with industry to come innovative technologies<br>and products as well as opportunities to co-create scalable solution.  |
| 39 | How can Aotearoa grow frontier firms to have<br>an impact on the global green economy? Are<br>there additional requirements needed to<br>ensure the growth of Māori frontier firms?<br>How can we best support and learn<br>from mātauranga Māori in the science and<br>innovation systems, to lower emissions? | Show the pathways to success in order to grow frontier firms. Help them to think 'big' – that the opportunities are global. Create genuine collaborations between start-ups and established industry players. Encourage local government, economic development agencies and regional councils to support frontier firms trailing new technology and products.<br>Fit for purpose procurement processes to support emerging technology and products are required.   |
| 40 | What are the opportunities for innovation<br>that could generate the greatest reduction in<br>emissions? What emissions reduction could   | Regions have a good handle on their local innovation community. Support the establishment of cohorts that<br>are already working together to solve these problems – such as agriculture, transport, waste, energy etc.<br>As mentioned above, the rise in plant-predominant diets has been noticeable around the world and<br>innovating in this sector could give Aotearoa a competitive edge to be leaders in this area.   |

<sup>&</sup>lt;sup>3</sup> <u>https://www.ipcc.ch/srccl/chapter/chapter-5/</u>

|    | we expect from these innovations, and how could we quantify it?   |  |
|----|---|--|
| 41 | Are there any other views you wish to share in relation to research, science and innovation?  | We support more investment in research, science and innovation but need practical tools and resources that support action by local government and communities (e.g. consistent tools for measuring and reporting emissions and undertaking governance assessments), not only academic studies.   |
|    |   | We encourage the Government to work with tertiary sector and member bodies to ensure that local government (and central government) has the capability and capacity it needs for this work long-term (i.e. having capability and capacity in-house as opposed to always relying on input from external consultants).We believe that the Government should offer economic incentives and other forms of financial support to students aiming to study in sectors that will require new low-emissions innovations. Universities will be critical partners in this space. |
|    | Behaviour Change  |  |
| 42 | What information, tools or forums would<br>encourage you to take greater action on<br>climate change?   | The science of climate change and sustainability (e.g. the challenges and solutions) must be taught in schools as part of the NZ Curriculum. If we are not equipping future generations with this core knowledge, then we will fail to make the lasting and transformational changes needed. This was a core demand from the recent School Strike for Climate – to include climate change in the curriculum.   |
|    |   | Schools can also be role models of sustainability for their students and their communities. This can be achieved by the way schools are designed and operated, as well as the way learning is shared with students and the community. For example, all schools should manage their waste, be energy efficient, encourage sustainable travel behaviours, conserve water and encourage the growing and eating of healthy food. Schools and early childcare centres operating in this way will be powerful community education facilities.                                |
|    |   | Schools can also deliver community education through evening classes and courses. This previously occurred with the help of government funding for community education.  |
| 43 | What messages and/or sources of information<br>would you trust to inform you on the need<br>and benefits of reducing your individual<br>and/or your businesses emissions? | A variety of different messengers will be required to reach different sectors of the community. As shown with the vaccination campaign, a strong central government campaign will work for many people, but other and more local voices are needed to reach everyone. Local government and local community and business groups are best placed to lead and coordinate local efforts.   |
|    |   | Positive case studies and stories of action taken by households, schools, communities, businesses, iwi and councils will be vital to grow momentum and encourage others to act. We need plenty of different forums to share, celebrate and encourage positive action. These stories could be collected and curated nationally and  |

|    |  | sent out to key networks to share with their communities. Partnerships with mainstream media will need to be fostered e.g. " <u>The Forever Project</u> " run by Stuff is a useful way to share stories.   |
|----|--|--|
|    |  | Behaviour change is not the same as mass marketing. The Warm-up Kiwi Homes insulation subsidy or the EV<br>Rebate are essentially behaviour change approaches. These specific and practical approaches should<br>continue or be expanded and be complemented by a wider communications approach that encourages<br>uptake.   |
|    |  | Understanding and responding to core barriers will be vital for successful behaviour change. National-level research could be undertaken and shared with local government and key influencers to more efficiently support local delivery.  |
| 44 | Are there other views you wish to share in relation to behaviour change? | It is vital that the Government leads a national awareness raising and education campaign about climate change and the need to act. This will need to be a significant and sustained effort, much like efforts to reduce harm on our roads or smoking. This campaign should appeal to core kiwi values and have a clear and simple call to action – linked to support available nationally to take action. It should also share stories of a diverse range of people taking action – businesses, households, communities, schools, iwi and farmers. Local government can help supply stories and case studies and foster connections with local networks and groups. |
|    |  | We support the concept of a behaviour change fund to allow organisations throughout New Zealand to reach<br>audiences at the local level in innovative ways. It will be important that this fund has sound measures of<br>success and aids wider learning from the projects supported (to enable the sharing of good practice). It will<br>be vital that MfE adopts enabling fund management processes to keep transaction costs low for<br>organisations who apply and for MfE.   |
|    |  | We support the efforts to establish a fund to drive behaviour change, but it's important to continuously compare this type of investment to walking and cycling infrastructure or public transport investment, which will enable and underpin the behaviours sought. The government's current approach is silent on the need to eat healthy, local and low carbon food choices.  |
|    |  | Local government has, for a number of years, called for a national campaign to drive behaviour change (similar to road safety campaigns). We believe that the design of behaviour change should be led by behavioural psychologists and be underpinned by community based social marketing tools.  |
|    |  | In principle we support the establishment of a behavioural change fund. This should be available to local government to support change with their communities at the local level.  |
|    |  |  |

|    | Moving Aotearoa to a circular economy   |   |  |
|----|---|---|--|
| 45 | Recognising our strengths, challenges, and<br>opportunities, what do you think our circular<br>economy could look like in 2030, 2040, and<br>2050, and what do we need to do to get<br>there?                     | We support the Government exploring and supporting circular economy approaches in New Zealand because<br>of the many benefits that would be delivered. Local social enterprises offer some great examples of purpose<br>driven businesses delivering more sustainable outcomes.<br>We agree that a circular economy aligns with a Te Ao Māori view and brings together aspects of mātauranga<br>Maori. We believe that education will have to be at all levels so that individuals recognise the role we each<br>must play in this transition. We propose offering funding to local reuse/repair centres to continue their work<br>in promoting a circular economy. |  |
| 46 | How would you define the bioeconomy and<br>what should be in scope of a bioeconomy<br>agenda? What opportunities do you see in the<br>bioeconomy for Aotearoa?  | The Climate Commission's definition on page 49 is good. New Zealand should be leaders in the bioeconomy and related technologies.   |  |
| 47 | What should a circular economy strategy<br>for Aotearoa include? Do you agree the<br>bioeconomy should be included within a<br>circular economy strategy?   | The bioeconomy can form part of the circular economy, but the concept of the circular economy itself needs to be wider – ultimately covering concepts that can be applied to the entire economy.<br>There are many different interpretations of what circular economy means and represents. We support implementing a circular economy if there is emphasis on developing common understanding to avoid "greenwashing" of circular economy actions and investments.<br>The circular economy should place increased responsibility on producers / manufacturers / retailers / industry rather than emphasising actions around consumers.                             |  |
| 48 | What are your views of the potential<br>proposals we have outlined? What work could<br>we progress or start immediately on a circular<br>economy and/or bioeconomy before drawing<br>up a comprehensive strategy? | No response   |  |
| 49 | What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?  | The significant proportion of products that are manufacturing offshore limits our ability to influence the design and regulate brand owners and limits our ability to reprocess products or resources. In order to have a local circular economy local manufacturing will be important.   |  |

| 50 | The Commission notes the need for cross-<br>sector regulations and investments that would<br>help us move to a more circular economy.<br>Which regulations and investments should we<br>prioritise (and why)?  | Within cross-sector regulations, we support regulation to incentivise reusables and a ban on organics going to landfill. We believe there should be more regulation on materials made from fossil fuels (i.e., plastics) as well as all hard-to-recycling items (i.e., mixed materials).   |
|----|--|--|
| 51 | Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?   | We agree with the core principles of a circular economy that MfE have set out, but would add that the system would need to be powered by renewable energy for it to be sustainable. The <u>Ellen Macarthur</u> <u>Foundation</u> is a leader on circular economy approaches and have formed useful partnerships with industry and have guidance for governments. Circular economy approaches must apply to the biological cycle and the industrial cycle of products. The current approach proposed by government focuses only on the bioeconomy. To address the industrial cycle, more emphasis is needed on product stewardship and lifecycle responsibilities.  |
|    |  | We support the development of a strategy for moving to a circular economy with a thriving bioeconomy, and recommend that the Government partner with local government to deliver this to ensure that local considerations/challenges/opportunities are taken into consideration. We request that local government be eligible for the pilot fund.  |
|    | Transitioning kov soctors  |  |
|    | Transitioning key sectors  |  |
|    | Transport  |  |
|    | Transport         We are proposing four new transport targets in   | the emissions reduction plan, and are seeking your feedback.   |
| 52 | TransportWe are proposing four new transport targets inDo you support the target to reduce vehiclekilometres travelled by cars and light vehiclesby 20 per cent by 2035 through providingbetter travel options, particularly in our  | the emissions reduction plan, and are seeking your feedback.<br>Council is of the view that the focus on providing better travel options alone will be unlikely to achieve the<br>identified target. Analysis of jointly developed spatial plans like the Western Bay of Plenty Urban Form &<br>Transport Initiative (UFTI) and the Western Bay of Plenty Transport System Plan (TSP) identify that a more<br>holistic solution is needed to reduce transport emissions.   |
| 52 | Transport         We are proposing four new transport targets in         Do you support the target to reduce vehicle         kilometres travelled by cars and light vehicles         by 20 per cent by 2035 through providing         better travel options, particularly in our         largest cities, and associated actions? | the emissions reduction plan, and are seeking your feedback.<br>Council is of the view that the focus on providing better travel options alone will be unlikely to achieve the identified target. Analysis of jointly developed spatial plans like the Western Bay of Plenty Urban Form & Transport Initiative (UFTI) and the Western Bay of Plenty Transport System Plan (TSP) identify that a more holistic solution is needed to reduce transport emissions.<br>This more holistic approach includes managing demand through macro trends such as town planning and flexible/remote working and improving the carbon efficiency of travel through the uptake of potentially electric and hydrogen private vehicles and buses, and mode shift towards active transport and micro-mobility. The approach should also consider pricing mechanisms such as road pricing and congestion charging and behavioural psychology approaches (such as community based social marketing). |

|    |   | The focus of this indicator, particularly on New Zealand's largest urban centres where the potential for mode shift is likely to be more achievable, is recognised. In this context, delivering mode shift and the benefits associated with this is central to the strategic direction of UFTI and the TSP. However, achieving a significant level of mode shift in the short term is unlikely to occur in the short term without radical changes. This should be acknowledged in the ERP and in order to decarbonise the transport network sooner than other, short term focused initiatives should be progressed as a priority.   |
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|    |   | Council suggests that the appropriateness of vehicle kilometres travelled ("VKT") by cars and light vehicles as<br>the headline or lead indicator needs further consideration. There are flaws with using VKT as a proxy for<br>emissions. Firstly, it ignores improvements in vehicle fuel economy or the shift to electric vehicles. Secondly,<br>VKT ignores any potential changes to fuel consumption and resulting emissions from changes in speed and<br>congestion (i.e. improved fuel economy and reduced emissions can be achieved through reducing<br>congestion). To address this relationship between fuel economy and speed and overcome the limitations of a<br>VKT-only KPI we suggest that either 'Total Carbon Emissions' [from the road transport network] or 'Vehicle<br>Minutes Travelled' is used to complement the VKT KPI. |
| 53 | Do you support the target to make 30 per cent<br>of the light vehicle fleet zero-emissions<br>vehicles by 2035, and the associated actions? | Council supports the focus on moving light vehicles to zero emissions. Council is of the view that given the long lead times associated with achieving other area of focus to reduce emissions such as modal shift then supporting an accelerated shift to an electric fleet will provide the quickest way to decarbonise the transport network. To this end, Council would support a strong increase in the 30% target by 2035 or bringing the 30% target forward a number of years. Council would also support a roadmap for how this target would be achieved including clarity that the 30% target may be too low, and a more ambitious target should be established.   |
| 54 | Do you support the target to reduce emissions<br>from freight transport by 25 per cent by 2035,<br>and the associated actions?              | Council supports the focus on reducing emissions from freight transport in the short-term and believe that the 25% target should be adjusted to be more ambitious. However, greater clarity is required on how any reduction would be facilitated. Reducing emissions in the freight industry has many complexities related to supply chains and the long-term investment plans of private and public companies, including ports and airports, as well as the long-term planning of associated transport infrastructure to accommodate freight.   |
|    |   | Because of these complexities associated with the freight industry it's vital that a roadmap for how<br>Government expects decarbonisation to take place is prepared as a matter of urgency. This will allow the<br>many stakeholders to be able to plan for and align their own operations to match this roadmap.  |
|    |   | From a Road Controlling Authority perspective, we would support increasing the capacity of the rail and coastal shipping networks to be able to accommodate a considerably greater number of freight movements. This approach would provide a low carbon alternative to road freight, reduce the maintenance cost   |

|    |  | associated with HGVs, provide additional capacity to the existing transport network and improve air quality and associated amenity within urban environments.   |
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|    |  | Given the timeframes associated with developing the rail network to be able to accommodate additional freight movements then in the short-term council believes Government should focus on increasing the capacity of coastal shipping lines and technologies. Although electric trucks do not appear to be a short-term solution there is also the option of supporting and developing hybrid truck technologies to reduce emissions. Government should also look to support the industry in the development of zero or low carbon alternatives for urban deliveries i.e. pick-up and drop-off. Many lessons could be taken from overseas (London being a known example) of where low carbon urban freight technologies have been developed. |
| 55 | Do you support the target to reduce the<br>emissions intensity of transport fuel by 15 per<br>cent by 2035, and the associated actions?  | Yes we support the focus on improving the emission intensity of fuels. Suggest this along with a priority focus<br>on improving vehicle fuel types is the short-term focus and priority.  |
| 56 | The Climate Change Commission has<br>recommended setting a time limit on light<br>vehicles with internal combustion engines<br>entering, being manufactured, or assembled<br>in Aotearoa as early as 2030. Do you support<br>this change, and if so, when and how do you<br>think it should take effect? | Technological change focussed on moving away from a predominantly ICE vehicle fleet to a more carbon efficient fuelled fleet is a key action that can be taken to significantly reduce carbon emissions in the short-term. Council suggests that this action needs to be complemented with incentives to remove ICE vehicles from the existing fleet to deliver greater impacts sooner. Council supports the approach being considered by Government to ensure that any limit or phased reduction in the internal combustion engine vehicles is done so in a socially equitable way.  |
|    |  | It's important that any policies/initiatives in this area do not significantly impact those who are already transport disadvantaged. These impacts could be direct e.g. scrappage scheme pricing or indirect e.g. creating a market whereby having older combustion engine vehicles serviced and maintained becomes prohibitively expensive as the market for spare parts becomes increasingly sparse. This is particularly important as it will be the poorer in society who will be the late adopters of electric vehicles as a result of price.  |
|    |  | We are also in favour of additional taxation of high-emitting vehicles to further incentivise the transition toward zero-emission vehicles (again provided that this is done in a socially equitable way).  |
| 57 | Are there any other views you wish to share in relation to transport?  | We note that this is the sector for which there is the most comprehensive list of possible measures.<br>We welcomed the Climate Change Commission's recommendation that the Government provides local<br>government with greater support to reduce communities' reliance on cars, including through legislation,<br>removing regulatory barriers, and providing increased and targeted funding, and that the Government works   |

|  | with local government to set targets and implement plans to substantially increase walking, cycling, public transport and shared transport by the end of 2022.   |
|--|--|
|  | Local government can help to drive mode shift with its communities. Mode-shift plans for urban areas need to be developed with local government. Although the plans will need to align across the motu, they will differ based on area. Local government input into those plans is needed from the outset. Funding the delivery of these plans is going to be the critical issue.  |
|  | Partnering with local government -   |
|  | • We agree that the Government must partner with iwi/Māori to co-design and develop solutions to reduce transport emissions. It must also partner with local government to do the same, given the critical role local government plays in planning, funding and delivering transport networks and options. The relationship with local government needs to be more than just strong collaboration and a joined-up approach, but a partnership. |
|  | • Any review of Regional Land Transport Plans needs to be done in partnership with local government and needs to align with changes to other planning processes – particularly through the resource management reforms.  |
|  | <ul> <li>Integrating land-use, urban development and transport planning and investments will require<br/>partnership with local government.</li> </ul>   |
|  | • We note concerns with the VKT measure as highlighted above in response to Q52.   |
|  | • Local government will require greater funding/funding tools to support infrastructure development.   |
|  | <ul> <li>Local government is well-placed to advise on just transition considerations.</li> </ul>   |
|  | • Local government would welcome financial support from central government to make public transport cheaper.   |
|  | • We agree in principle with the proposal to make changes to regulation to make it easier for local government to reallocate road/street space rapidly for public transport, walking, cycling and shared mobility in urban areas and create an expectation this will occur. The Government needs to work in partnership with local government to design regulations that will work and that don't have unintended consequences.                |
|  | <ul> <li>Any investigation of ways to raise revenue for transport in the future, including replacing the land<br/>transport funding system, needs to happen in partnership with local government.</li> </ul>   |

|  | • | While we welcome the recommendation around "enabling congestion pricing and investigate how we can use other pricing tools to reduce emissions" this recommendation lacks ambition – road pricing tools should be enabled not just investigated further. Local government has been calling for road user charging for some time (as far back as the joint Local Government New Zealand/Automobile Association/Road Transport Forum submission on Land Transport Funding in 1993).   |
|--|---|---|
|  | • | Road pricing appears to only be under serious consideration for Auckland (acknowledging there is some signalling in the consultation document that it could be looked at for Wellington). The Government should work with other councils to look at introducing it elsewhere.   |
|  | • | Road tolling – currently can only happen on the issuance of an order-in-council by the Governor-General<br>on the recommendation of the Minister of Transport. A stringent set of criteria, on top of public<br>consultation. Making road tolling easier (for new and existing roads) should be explored. Section 46 of<br>the Land Transport Management Act could be amended to permit tolling of existing road use subject to<br>consultation with the public. Tolling of new and existing roads could be a useful intermediate step to full<br>road pricing.   |
|  | • | Integration of transport and land use planning is important, so the Government is going to need to address some of local government's concerns around the development of planning instruments by regional bodies (RM reform proposals) that aren't necessarily responsible for implementing them.   |
|  | • | Price alone isn't going to generate the mode shifts that are needed – the public transport network needs to be convenient for users too, which is why integrated land use and transport planning is important. Spatial planning can help with this – which goes to the importance of aligning work on the ERP with the RM reform programme. Further work needs to be done to address how implementation of regional spatial plans will be supported by central government, particularly with funding, and how to address some councils' concerns around the potential for loss of local voice/decision-making in spatial planning (with potential consequences for buy in from those councils around implementation). |
|  | • | Local government can help to drive mode shift with its communities. Mode-shift plans for urban areas<br>need to be developed with local government. Although the plans will need to align across the motu, they<br>will differ based on area. Local government input into those plans is needed from the outset. As stated<br>elsewhere, funding the delivery of these plans is going to be the critical issue.   |
|  | • | Development of a national EV infrastructure plan should include local government given the need for implementation across the country.  |
|  |   |   |

|    | Energy and Industry  |   |  |
|----|--|---|--|
|    | Energy Strategy  |   |  |
| 58 | In your view, what are the key<br>priorities, challenges and opportunities that<br>an energy strategy must address to enable a<br>successful and equitable transition of the<br>energy system? | The delivered cost of electricity to consumers is important for residential and commercial and industrial consumers. Energy affordability in the residential market ensures living costs and transition costs are minimised. Low electricity costs lead to people being able to heat their homes and remain healthier. Commercial and industrial consumers need electricity to be less expensive than fossil fuel alternatives, so that the transition is economically viable (with or without government funding). |  |
|    |  | We need to ensure that energy is affordable enough to facilitate social development, and is secure and reliable, whilst ensuring that the source of energy is becoming cleaner over time.   |  |
|    |  | Careful consideration needs to be given to "waste to energy" proposals. While this can be perceived as delivering on reducing waste going to landfill and creating energy, there are significant issues and adverse effects that can result from such developments.   |  |
|    |  | If waste to energy is to be supported, then the Waste Disposal Levy should be levied for any feedstock that does not reduce waste. This should not include anaerobic digestion of organics and food scraps or liquid wastes (liquid wastes are unavoidable). Incineration and pyrolysis need to match the landfill rate so that incineration does not become viable and lock in feedstocks. The levy should apply to the lower levels of the waste hierarchy and levy avoidance.                                    |  |
| 59 | What areas require clear signalling to set a   | Any phasing out of fossil fuels and price paths for ETS.  |  |
|    | pathway for transition?  | A clear price path for ETS (e.g. 20 years) will enable consumers to have confidence in cost projections to enable transition projects to succeed.   |  |
|    | Setting targets for the new energy system  |   |  |
| 60 | What level of ambition would you like to see<br>Government adopt, as we consider the<br>Commission's proposal for a renewable<br>energy target?  | The target should be set based on both what is needed to meet emissions targets as well as what is practical<br>and feasible to implement today.<br>Large reductions in fossil fuels can be met with today's technology. Large scale investment in hot water heat<br>pump technology, for example, in residential homes would reduce significantly residential electricity  |  |

|    |   | consumption, which would also allow thermal generation assets to be retired, and would reduce electricity prices for everyone (due to tranche-based electricity pricing in NZ).   |
|----|---|---|
|    | Phasing out fossil gas while maintaining co   | nsumer wellbeing and security of supply   |
| 61 | What are your views on the outcomes, scope,<br>measures to manage distributional impacts,<br>timeframes and approach that should be<br>considered to develop a plan for managing the<br>phase out of fossil gas?                                  | No response   |
|    | Decarbonising the industry sector   |   |
| 62 | How can work under way to decarbonise the<br>industrial sector be brought together, and<br>how would this make it easier to meet<br>emissions budgets and ensure an equitable<br>transition?  | No response   |
| 63 | Are there any issues, challenges and<br>opportunities for decarbonising the industrial<br>sector that the Government should consider,<br>that are not covered by existing work or the<br>Commission's recommendations?                            | No response   |
|    | Addressing current data gaps on New Zeala   | nd's energy use and associated emissions through an Energy and Emissions Reporting scheme   |
| 64 | In your view, should the definition of a large<br>energy user for the purposes of the proposed<br>Energy and Emissions Reporting scheme<br>include commercial and transport companies<br>that meet a specified threshold?                         | Yes   |
| 65 | We have identified a proposed threshold of 1<br>kt CO <sub>2</sub> e for large stationary energy users<br>including commercial entities. In your view, is<br>this proposed threshold reasonable and<br>aligned with the Government's intention to | This threshold will likely provide the data resolution needed to improve the emissions data currently held by the Government. However, it would not necessarily form a solid basis for ongoing decarbonisation support of large emitting businesses, as this would be better supported through contestable funding on a \$/tCO2e abated metric. This will enable all low hanging fruit (from a gross emissions reductions perspective) to be addressed first. |

|    | meet emissions budgets and ensure an equitable transition?   |   |  |
|----|--|---|--|
| 66 | In your view, what is an appropriate threshold<br>for other large energy users such as transport<br>companies?   | No response   |  |
| 67 | Are there other issues, challenges or<br>opportunities arising from including<br>commercial and transport companies in the<br>definition of large energy users for the<br>purposes of the proposed Energy and<br>Emissions Reporting scheme that the<br>Government should consider? Supporting<br>evidence on fleet size and characteristics is<br>welcomed. | No response   |  |
|    | Supporting development and use of low-er   | nissions fuels  |  |
| 68 | What level of support could or should<br>Government provide for development of low-<br>emissions fuels, including bioenergy and<br>hydrogen resources, to support<br>decarbonisation of industrial heat, electricity<br>and transport?   | Government should back development of low-emissions fuels based on outcomes – and competitive targets for those technologies that are supported. For example, specific price points for fuels (to enable mass uptake) should be considered. Rigorous studies on the likely costs of alternative fuels should be carried out as any money spent on fuels which will not have meaningful uptake will take funding away from projects that will reduce carbon. |  |
| 69 | Are there any other views you wish to share in relation to energy?   | No response   |  |
|    | Building and construction  |   |  |
| 70 | The Commission recommended the<br>Government improve the energy efficiency of<br>buildings by introducing mandatory<br>participation in energy performance<br>programmes for existing commercial and   | Introducing mandatory participation in energy performance programmes for existing commercial and public<br>buildings is a great opportunity for the Government to show leadership by adopting the frameworks<br>(Embodied and Operational) ahead of the private sector.<br>This is not a new proposal, as it was briefly mentioned in both frameworks from the building for climate<br>change programs, Chapter 6, 'Approach'.                              |  |

|    | public buildings. What are your views on this?   | This would be a good approach. NABERSNZ should be mandatory for all Govt buildings immediately followed by commercial buildings over an acceptable time period.  |
|----|--|--|
| 71 | What could the Government do to help the<br>building and construction sector reduce<br>emissions from other sectors, such as energy,<br>industry, transport and waste?   | The most crucial step would be to increase standards within the New Zealand Building Code – to improve energy performance and incorporate embodied carbon and lifetime considerations. Industry tools and training would then be needed to equip the building sector with the ability to meet these needed higher standards.   |
|    |  | Off-site manufacturing presents significant opportunities to improve the performance of buildings and to reduce waste, energy and transport associated with construction. Rules and regulations need to enable high performance prefabrication.  |
|    |  | We support guidance, investment and regulation for construction and demolition waste that reduce the levels going to landfill and incentivise reuse and refurbishment.   |
|    |  | As per previous response to Q33, we support reducing waste in the construction and demolition industry.<br>This could be supported by Government amending the Building Act to provide the opportunity for local<br>government to withhold Building Consents and Code of Compliance (CCC) Certificates under the Building Act<br>by requiring that all construction and demolition activities are required to provide Waste Management Plans.   |
| 72 | The Building for Climate Change programme<br>proposes capping the total emissions from<br>buildings. The caps are anticipated to reduce<br>demand for fossil fuels over time, while<br>allowing flexibility and time for the possibility<br>of low-emissions alternatives. Subsequently,<br>the Commission recommended the<br>Government set a date to end the expansion<br>of fossil gas pipeline infrastructure<br>(recommendation 20.8a). What are your views<br>on setting a date to end new fossil gas<br>connections in all buildings (for example, by<br>2025) and for eliminating fossil gas in all<br>buildings (for example, by 2050)? How could<br>Government best support<br>people, communities and businesses to<br>reduce demand for fossil fuels in buildings? | We support ending new fossil gas connections by 2025.<br>Eliminating fossil gas in all buildings could be achieved sooner than 2050 (e.g. 2030) to align with the date<br>when government is proposing to achieve a 100% renewable electricity supply.<br>The date to end expansion of fossil gas pipelines should be brought forward as electric heating / cooling /<br>cooking solutions in general, have operational cost parity with fossil gas solutions.<br>Bio-gas made from sustainable sources could be a useful transition from liquid petroleum gas.<br>We support Government setting dates around these targets and encourage all actions to reduce demand of<br>fossil fuels. |

| 73 | The Government is developing options for<br>reducing fossil fuel use in industry, as outlined<br>in the Energy and industry section. What are<br>your views on the best way to address the use<br>of fossil fuels (for example, coal, fossil gas and<br>LPG) in boilers used for space and water<br>heating in commercial buildings? | <ul> <li>The use of fossil fuels in buildings should be strongly discouraged (e.g. taxed until eventually banned). To replace fossil gases, three major methods have emerged overseas, as practical solutions to the continued reliance on fossil fuels: <ul> <li>bio-methane, a renewable gas produced by the fermentation of organic matter mostly derived from farms; (same appliances can be used, with an adaptor to burn the gas properly);</li> <li>pyro-gasification, a technology that converts wood into gas; and</li> <li>methanation, which uses electricity to produce hydrogen and then methane.</li> </ul> </li> <li>Each of these methods, or resources, reduce atmospheric emissions, generating electric power for engines and turbines, and thus they offer more ecologically sound possibilities to the use of fossil fuels.</li> <li>In general, most fossil fuel based heating systems in buildings have higher operational costs than low carbon alternatives. No new buildings should use fossil fuels for heating.</li> </ul> |
|----|--|--|
| 74 | Do you believe that the Government's policies<br>and proposed actions to reduce building-<br>related emissions will adversely affect any<br>particular people or groups? If so, what<br>actions or policies could help reduce any<br>adverse impacts?  | <ul> <li>Everyone will be impacted by these changes, the poor and vulnerable even more so. Protecting them in particular will need to be a priority.</li> <li>For residential properties, landlords have no incentive to install systems with low operational costs. This disadvantages tenants who are unable to pay for and install lower operational cost systems. Additionally, if a landlord was required to upgrade the heating system, they might try to pass this cost on to the tenant. Ideas around how to address this should be considered as part of the plan.</li> </ul>   |
| 75 | How could the Government ensure the needs<br>and aspirations of Māori and iwi are<br>effectively recognised, understood and<br>considered within the Building for Climate<br>Change programme?   | Include a diversity of representation in related programme steering groups and working groups – give Maori<br>a seat at the table and a voice in decision-making.  |
| 76 | Do you support the proposed behaviour<br>change activity focusing on two key groups:<br>consumers and industry (including building<br>product producers and building sector<br>tradespeople)? What should the<br>Government take into account when seeking<br>to raise awareness of low-emissions buildings<br>in these groups?      | The Government's priority should be to raise minimum standards for buildings and to support industry with tools and training to achieve these new standards.<br>The next priority should be to develop tools and approaches that enable informed decisions to be made when designing, building, buying or renting properties. Currently people are making decisions with limited information. Tools such as Energy Performance Certificates, Homestar, Greenstar, NABERS, ISCA and LCA Quick provide useful information at certain phases of the building lifecycle.   |

|    |  | Raising demand for high performance buildings will be important (i.e. educating customers). However, the building industry are effectively advisors to their customers. Giving industry professionals the skills and capability to deliver sound advice and higher performing buildings will be vital. One example of this would be to have approved design solutions that are energy efficient, low carbon and easy to consent.<br>We propose that best practices for behaviour change programmes in this space be shared with councils across the country so that they can amplify these messages across their local areas.  |
|----|--|--|
| 77 | Are there any key areas in the building and<br>construction sector where you think that a<br>contestable fund could help drive low-<br>emissions innovation and encourage, or<br>amplify, emissions reduction opportunities?<br>Examples could include building design,<br>product innovation, building methodologies or<br>other? | <ul> <li>The industry urgently needs free online tools (promised by MBIE in the Program for climate change framework operational page 8) i.e.:</li> <li>free training</li> <li>free advice.</li> <li>free EPC (Energy Performance Certificate)</li> <li>Contestable funding for specific technologies – e.g. hot water heat pumps. To enable mass uptake in existing buildings.</li> </ul>   |
| 78 | The Ministry of Business, Innovation and<br>Employment (MBIE) is considering a range of<br>initiatives and incentives to reduce<br>construction waste and increase reuse,<br>repurposing and recycling of materials. Are<br>there any options not specified in this<br>document that you believe should be<br>considered?          | <ul> <li>Emphasize the need to use lean design methods and quantity surveyors to minimise wastage from construction.</li> <li>Tools like the BRANZ-managed Resource Efficiency in Building Related Industries can help with the systems and processes needed to minimise waste from demolition and construction. Other options to explore include: <ul> <li>Tools to more accurately measure the materials needed.</li> <li>Encourage companies to take back (&amp; refund) material not used on site.</li> <li>Producer responsibility - make building material suppliers deal with their product waste, after use.</li> <li>No GST or low % GST on recycled materials.</li> </ul> </li> <li>We agree there must be regulations around construction and demolition waste that are designed to promote the reuse of resources. We support actions that would amplify the work and impact of businesses leading the way in this sector.</li> <li>As per previous answers at Q33 and Q71, we support changes to the Building Act to require preparation and monitoring and reporting on Waste Management Plans for all construction and demolition activities. One issue is that the volumes of waste in this industry are largely unknown so better (mandatory) reporting, as above, must be undertaken to enable data to be collected. This will allow private companies to then focus on</li> </ul> |

|    |  | specific waste streams and design innovative solutions to reduce, reuse and recover the same. i.e. recovering off-cut gib board could be re-used for composting or put back into the manufacturing process.  |
|----|--|--|
| 79 | What should the Government take into<br>account in exploring how to encourage low-<br>emissions buildings and retrofits (including<br>reducing embodied emissions), such as<br>through financial and other incentives?                                       | In addition to encouraging low emissions, we believe that retrofits to commercial buildings should include cultural considerations for Māori as well as initiatives for improved health and wellbeing (i.e. through green walls and green spaces) and social sustainability factors (i.e., all-gender washrooms for LGBTQI+ community).  |
| 80 | What should the Government take into<br>account in seeking to coordinate and support<br>workforce transformation, to ensure the<br>sector has the right workforce at the right<br>time?  | No response  |
| 81 | Our future vision for Aotearoa includes a place<br>where all New Zealanders have a warm,<br>dry, safe and durable home to live in. How can<br>we ensure that all New Zealanders benefit<br>from improved thermal performance<br>standards for our buildings? | Encourage innovation in the building sector. Off-site manufacturing when widely adopted can deliver significant benefits, improve energy performance, reduce waste, minimise transport to a building site and cut costs and carbon.  |
| 82 | Are there any other views you wish to share<br>on the role of the building and construction<br>sector in the first emissions reduction plan?   | Retrofitting programmes for residential and commercial buildings will be vital since most of the buildings needing to reduce emissions already exist. The Plan should place greater emphasis on retrofitting as this can deliver a wide range of co-benefits and enable a just transition / equity approach. For example, the Warmer Kiwi Homes programme should continue and be expanded to a wider range of solutions able to make homes more energy efficient. A warm, dry home that is cheaper to run greatly supports low- and fixed-income households. The transition needs to be equitable and consistent with the Government's objectives around housing availability and affordability. |
|    |  | The Government should do more to encourage the use of low emission building materials, such as wood.<br>This could also support the local economy, by utilising the increase in pine plantations.  |
|    |  | The ERP also needs to align with the updates to the Building Code that MBIE has recently consulted on – particularly around energy efficiency in buildings. We support the Taituarā submission on those proposed changes.  |
|    | Agriculture  |  |

| 83 | How could the Government better support<br>and target farm advisory and extension<br>services to support farmers and growers to<br>reduce their emissions?   | No response on agriculture issues |
|----|--|-----------------------------------|
|    | How could the Government support the specific needs of Māori-collective land owners?   |                                   |
| 84 | What could the Government do to encourage<br>uptake of on-farm mitigation practices, ahead<br>of implementing a pricing mechanism for<br>agricultural emissions?   |                                   |
| 85 | What research and development on mitigations should Government and the sector be supporting?   |                                   |
| 86 | How could the Government help industry and<br>Māori agribusinesses show their<br>environmental credentials for low-emissions<br>food and fibre products to international<br>customers?                                     |                                   |
| 87 | How could the Government help reduce<br>barriers to changing land use to lower<br>emissions farming systems and products?<br>What tools and information would be most<br>useful to support decision-making on land<br>use? |                                   |
| 88 | Are there any other views you wish to share in relation to agriculture?  |                                   |

|    | Waste  |  |
|----|--|--|
| 89 | The Commission's recommended emissions<br>reduction target for the waste sector<br>significantly increased in its final advice. Do<br>you support the target to reduce waste<br>biogenic methane emissions by 40 per cent by | Yes, although such a significant reduction in methane emissions from waste, while desirable, is likely to have significant cost implications for local authorities and other operators of landfills.   |
|    |  | We consider that in order to meet this goal, it will be necessary to increase investment in this area including broadening how the waste levy can be used to fund research, new infrastructure, capital works and equipment.   |
|    | 2000.  | Modern resource consented landfills should be required to capture and beneficially use landfill gas.<br>Consequently, these provisions mostly relate to existing and historic landfills. The government's 'Projects To<br>Reduce Emissions' scheme was successful at supporting landfill gas collection projects and could be<br>reinstated to help unlock the capital needed to establish these systems.  |
|    |  | We believe that all councils should have streamlined waste systems to build a cohesive, nation-wide approach to waste issues.  |
| 90 | Do you support more funding for education<br>and behaviour change initiatives to help<br>households, communities and businesses<br>reduce their organic waste (for example, food,<br>cardboard, timber)?                     | Yes, we support more funding for national education and behaviour change initiatives, provided that this does not impact on the funding of successful local initiatives already underway.  |
|    |  | We believe there should be a register of best practices that is shared across all councils to create a nation-<br>wide approach to waste education and communications.   |
|    |  | This could be led by clear national education programmes that are supported and rolled out (with funding support) at the local government level. For example, "Keep it Beautiful" litter campaigns have a national message but can be targeted locally.  |
| 91 | What other policies would support<br>households, communities and businesses to<br>manage the impacts of higher waste disposal<br>costs?  | Bans on certain products and more effective and regulated product stewardship schemes, options identified in "Taking responsibility for our waste", Ministry for the Environment October 2021.   |
|    |  | We support the increases in the Waste Disposal Levy and propose that they should rise to similar levels as overseas (over \$150/tonne). However, we believe the Government should be prepared to support councils in the corresponding rise we can expect in illegal dumping as the Waste Levy and residential rates increase. We have already seen rises in illegal dumping in Tauranga, where illegal dumping doubled in 2021 compared to 2020 for July-September. |
| 92 | Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1  | Yes, we would support this proposed ban, provided that there are alternative ways to recycle this waste and there are appropriate measures and resources to monitor and enforce compliance.  |

|    | January 2030, if there were alternative ways to recycle this waste instead?   |   |
|----|---|---|
| 93 | Would you support a proposal to ban all<br>organic materials going to landfills that are<br>unsuitable for capturing methane gas?   | Yes, we support the proposal.   |
| 94 | Do you support a potential requirement to<br>install landfill gas (LFG) capture systems at<br>landfill sites that are suitable?   | Yes, we support this requirement for currently operating and new facilities. We also agree that such a requirement should not necessarily apply to closed landfills because of the high cost, relative to the limited benefits of capturing emissions through installing LFG systems on closed landfills. In addition, alternative approaches and guidelines should be developed where mitigation of emissions outperforms LFG capture for energy.  |
| 95 | Would you support a more standardised<br>approach to collection systems for households<br>and businesses, which prioritises separating<br>recyclables such as fibre (paper and<br>cardboard) and food and garden waste? | Tauranga City Council is one of only five local authorities which currently separate both recyclables and food<br>and garden waste (for composting). However, we do not support a standardised collection method for<br>materials because any approach should take into account local circumstances and consider best-fit collection<br>systems. We note that decisions regarding source separation or commingled divertible materials are best<br>made locally and will differ due to scale, processing capacity and transportation logistics.                                 |
|    |   | Any system requirements need to recognise that what is appropriate for a large metropolitan area may not be practicable, or most efficient across the country.  |
|    |   | We do support greater consistency about the way materials are presented, such as 'lids off' or the types of plastics collected – to make it simpler for residents and to enable synergies for processing the materials collected (e.g. regional recycling facilities).  |
|    |   | We support a standardised approach that would focus on diverting compostable and recyclable materials from landfill. We support a nation-wide approach to recycling and banning items from having the recycling logo for mixed materials or plastics #3, #4, #6, and #7 as it is confusing for the average consumer. Where appropriate, we also encourage items to use an "ingredients list" for packaging (such as the New Zealand brand of ice blocks, Nice Blocks, which shows what the packaging is made from) to increase public awareness and education around packaging. |
| 96 | Do you think transfer stations should be<br>required to separate and recycle materials,<br>rather than sending them to landfill?  | Yes, we agree.<br>However, we caution that work in redeveloping transfer stations has already been met with delays in<br>Tauranga due to limited human resources available to complete the work. More resources will need to be<br>made available to meet any national targets and timelines associated with the separation and recycling of  |

|    |  | new materials. NZ's large waste management companies are already understaffed for their operational services (kerbside collection and transfer stations) and struggle to employ and retain qualified employees. Being able to stay adaptable in the waste sector's evolving landscape will be a challenge for these companies. We therefore propose that Government consider softening certain immigration procedures to allow an increase the workforce as well as additional mental health support for waste-sector employees given their frontline/essential worker status.  |
|----|--|---|
| 97 | Do you think that the proposals outlined in this document should also extend to farm dumps?                      | Yes, we agree.  |
| 98 | Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms? | We would strongly support development of a National Environmental Standard for Disposal to Land, to address unlicensed disposal activities such as stockpiling and farm dumps. This approach would enable accurate data to be collected and include standards for waste related emissions.  |
|    |  | We encourage greater support and implementation of the Farm Plastics Product Stewardship Scheme, with regional processing hubs for farm plastics (and other soft plastics such as building wraps) established. The "gate fees" must be reduced / removed for farmers to encourage them to take the time out of their schedules to collect, transport and dispose of this waste as such facilities.  |
| 99 | What other options could significantly reduce landfill waste emissions across Aotearoa?                          | Material bans and LFG capture and treatment systems could contribute to reduced emissions. LFG systems which generate energy need to be integrated with adequate infrastructure e.g. transmission lines so that there is suitable capacity to utilise the energy. For landfill and unlicensed disposal sites, where LFG capture is not feasible to install, alternative approaches such as sequestration via landfill capping approaches to also be considered with best practice guidance developed.   |
|    |  | We believe having robust strategies to eliminate waste altogether should be New Zealand's priority (rather than finding markets to reuse or recycle items). We also support "Right to Repair" schemes that prioritise the reuse of items and the minimisation of waste going to landfill. In addition, we support actions that would promote low-waste businesses. For instance, several countries across the globe present residents with far more accessible options for zero-waste grocery shopping. We suggest that this behaviour change could be encouraged by removing the risk for zero-waste stores to open their doors and expand to more areas. Government could subsidise commercial rent and/or employee wages for these businesses so that they can magnify their impact at a larger scale. |
|    |  | We also believe that single-use coffee cups ought to be added to the list of items that will be banned before 2025. This decision would send a clear message around the need to phase out all single-use items and our collective need to move away from disposal (bottom of the waste hierarchy) and toward reuse. There is a  |

| 100 | Do you think it would be possible to phase<br>down the bulk import<br>of hydrofluorocarbons (HFCs) more quickly<br>than under the existing Kigali Amendment<br>timetable, or not? | No response on F-gases   |
|-----|---|--|
|     | F-gases   | ·  |
|     |   | We also need to find ways for local government to partner with the private sector and community to reduce emissions from waste – local government is only partially responsible for the emissions from waste.  |
|     |   | There needs to be alignment between the ERP and the Ministry for the Environment's waste work programme, including a new waste strategy and waste legislation that it is consulting on now.  |
|     | Other comments  | Partnering with local government on any initiatives to reduce emissions from waste is critical.  |
|     |   | If organics are banned from landfill, there will be an increase in organics processing. The quality of compost needs to be safeguarded to ensure the product can be returned to the earth as part of a positive biological system. Standards need to be set to ensure contaminants (such as plastic, PFAS and broadleaf herbicides) are eliminated or mitigated from compost. Applying standards, such as compostable packaging being acceptable to BioGro Organic Certification standards, is required.   |
|     |   | We believe Government should apply a regulatory approach for single-use compostable products, which will have negative implications if unaddressed. This includes compostability standards (must be "home compostable") as well as regulations to ensure transparency about what is contained in compostable products, and bans on problematic additives, such as PFAS. Packaging that is "home compostable" should mean that every component and material used in the packaging will breakdown and decompose into organic soil. This includes the whole of the package; the printing ink, and the adhesives used to seal the package. |
|     |   | We are also in support of more taxation/regulation of all items that come in single-use plastic wrapping (beyond food items).  |
|     |   | To reduce landfill waste and roadside litter, we believe that the ban on single-use plastics must extend to single-use packaging used in fast-food restaurants. Fast-food chains in North America have already begun trials with reusable containers. <sup>4</sup>   |
|     |   | clear and easy alternative for single-use coffee cups, and several businesses have already shown that eliminating them as an option for customers is completely viable without lowering their profit margins.  |

<sup>&</sup>lt;sup>4</sup> <u>https://www.thespec.com/business/2021/11/01/burlington-tim-hortons-tupperware-reusable-packaging.html</u>

| 101 | One proposal is to extend the import<br>phase down to finished products containing<br>high-global warming potential HFCs. What<br>impact would this have on you or your<br>business?                        |                         |
|-----|---|-------------------------|
| 102 | What are your views on restricting the import<br>or sale of finished products that contain high-<br>global warming potential HFCs, where<br>alternatives are available?                                     |                         |
| 103 | What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?   |                         |
| 104 | Do you have any thoughts on alternatives to<br>HFC refrigerants Aotearoa should utilise<br>(eg, hydrofluoroolefins or natural<br>refrigerants)?   |                         |
| 105 | Can you suggest ways to reduce refrigerant<br>emissions, in combination with other aspects<br>of heating and cooling design, such as energy<br>efficiency and building design?                              |                         |
|     | Forestry  |                         |
| 106 | Do you think we should look to forestry to<br>provide a buffer in case other sectors of the<br>economy under-deliver reductions, or to<br>increase the ambition of our future<br>international commitments? | No response on forestry |
| 107 | What do you think the Government could do to support new employment and enable  |                         |

|     | employment transitions in rural communities affected by land-use change into forestry?  |  |
|-----|---|--|
| 108 | What's needed to make it more economically<br>viable to establish and maintain native forest<br>through planting or regeneration on private<br>land?  |  |
| 109 | What kinds of forests and forestry systems, for<br>example long-rotation alternative exotic<br>species, continuous canopy harvest, exotic to<br>native transition, should the Government<br>encourage and why?                  |  |
|     | Do you think limits are needed, for example,<br>on different permanent exotic forest systems,<br>and their location or management? Why or<br>why not?   |  |
|     | What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?   |  |
| 110 | If we used more wood and wood residues<br>from our forests to replace high emitting<br>products and energy sources, would you<br>support more afforestation? Why or why not?  |  |
| 111 | What role do you think should be played by:<br>a. central and local governments in<br>influencing the location and scale of<br>afforestation through policies such as<br>the resource management system,<br>ETS and investment? |  |

|     | <ul> <li>b. the private sector in influencing the location and scale of afforestation?</li> <li>Please provide reasons for your answer.</li> </ul>                |  |
|-----|---|--|
| 112 | Pests are a risk to carbon sequestration and<br>storage in new, regenerating and existing<br>forest. How could the Government support<br>pest control/management? |  |
| 113 | From an iwi/Māori perspective, which issues<br>and potential policies are a priority and why,<br>and is anything critical missing?                                |  |
| 114 | Are there any other views you wish to share in relation to forestry?  |  |

He tono nā



Te Rünanga o NGÄI TAHU

ki te MINISTRY FOR THE ENVIRONMENT

> e pā ana ki te EMISSIONS REDUCTION PLAN

> > 24 November 2021

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## 1. INTRODUCTION

- 1.1 Te Rūnanga o Ngāi Tahu ("**Te Rūnanga**") welcomes the opportunity to respond to the Ministry for the Environment (the "**Ministry**") *Te Hau Mārohi ki Anamata* – *Transitioning to a low-emissions and climate resilient future* and acknowledges these efforts as an important step towards achieving sustainable net emissions reductions and a climate resilient future in Aotearoa.
- 1.2 As an iwi, Ngāi Tahu view the world through an intergenerational lens. Te Rūnanga is guided by the whakataukī "Mō tātou, ā, mō kā uri a muri ake nei" (for us, and those who come after us), which is particularly relevant in the context of climate change. We all have a responsibility to set the foundations for the world our tamariki and mokopuna will inherit. Our responsibility today is to ensure that they have a safe and prosperous future, with freedom and choice.
- 1.3 Te Rūnanga has been considering the impact of climate change on the Ngāi Tahu takiwā and our people for some years. In 2018 Te Rūnanga launched a tribal climate change strategy, <u>He Rautaki Mō Te Huringa o Te Āhuarangi</u>. This strategy guides us to take action to future-proof all tribal assets, interests and activities, and to ensure that Ngāi Tahu, our Papatipu Rūnanga and whānau are supported to respond effectively to the risks of climate change, as well as positioning the iwi to make the most of the opportunities a changing climate and economy may offer.
- 1.4 Te Rūnanga supports the Government's commitment to reducing the emissions of Aotearoa and responding to climate change, by moving to a low emission, climate-resilient economy through a just transition.

## 2. TE RŪNANGA O NGĀI TAHU

- 2.1 This response is made on behalf of Te Rūnanga which is statutorily recognised as the representative tribal body of Ngāi Tahu whānui and was established as a body corporate on 24 April 1996 under section 6 of the Te Rūnanga o Ngāi Tahu Act 1996 ("**TRONT Act**").
- 2.2 Te Rūnanga encompasses 18 Papatipu Rūnanga, who uphold the mana whenua and mana moana of their rohe. Te Rūnanga is responsible for managing, advocating and protecting, the rights and interests inherent to Ngāi Tahu as mana whenua.
- 2.3 Te Rūnanga respectfully requests that the Ministry for the Environment accord this response with the status and weight of the tribal collective of Ngāi Tahu whānui comprising over 70,000 registered iwi members, in a takiwā comprising the majority of Te Waipounamu. A map of the Ngāi Tahu claims area is attached at **Appendix One**.
- 2.4 Notwithstanding its statutory status as the representative voice of Ngāi Tahu whānui "for all purposes", Te Rūnanga accepts and respects the right of individuals and Papatipu Rūnanga to make their own responses in relation to this matter.
#### 3. TE TIRITI O WAITANGI AND PARTNERSHIP

- 3.1 The contemporary relationship between the Crown and Ngāi Tahu is defined by three core documents; the Treaty of Waitangi, the Ngāi Tahu Deed of Settlement 1997 and the Ngāi Tahu Claims Settlement Act (**NTCSA**). These documents form an important legal relationship between Ngāi Tahu and the Crown and entrench the Treaty partnership.
- 3.2 Of significance, the Deed of Settlement and NTCSA confirmed the rangatiratanga of Ngāi Tahu and its relationship with the natural environment and whenua within the takiwā.
- 3.3 As recorded in the Crown Apology to Ngāi Tahu (see **Appendix Two**), the Ngāi Tahu Settlement marked a turning point, and the beginning for a "new age of co-operation". In doing so, the Crown acknowledged that Ngāi Tahu holds rangatiratanga within the Ngāi Tahu takiwā. The Crown Apology also acts as a guide for the basis of the post-Settlement relationship between Ngāi Tahu and the Crown and as such, underpins this response.

## 4. TE RŪNANGA RESPONSE TO THE EMISSIONS REDUCTION PLAN

4.1 The response of Te Rūnanga is structured around the areas identified in the consultation document, when consultations questions are answered directly the question number is indicated (e.g. Q1).

#### **Transition Pathway**

- 4.2 Te Rūnanga supports the Guiding Principles outlined in the consultation document.
- 4.3 Te Rūnanga has consistently emphasised the importance of upholding Te Tiriti o Waitangi, and ensuring a Te Tiriti Partnership approach is undertaken, particularly on kaupapa such as climate change that hold significant importance to Ngāi Tahu. It is imperative that the rights, interests and values of Ngāi Tahu whānui are advanced and protected in the spirit of Te Tiriti o Waitangi and the Ngāi Tahu Settlement.
- 4.4 Of particular importance to Te Rūnanga is that this transition is managed in an equitable and inclusive way, that ensures the inequalities experienced by our whānau today are not exacerbated in the future by our decision making today.

#### Te Tiriti o Waitangi

- 4.5 Te Rūnanga was supportive and encouraged to see the Climate Change Commission's ("**Commission's**") recommendations regarding a genuine, active and enduring partnership with iwi/Māori and their acknowledgement of the importance of acknowledging rangatiratanga of iwi/Māori and enabling iwi/Māori to exercise our role as kaitiaki.
- 4.6 In the discussion document, the Ministry describes (page 25) "Through the Climate Change Commission's advice and our own Māori engagement, we

have heard that the transformational changes required are more likely to succeed if there is a strong role for Māori that is consistent with Te Tiriti. This acknowledges that much can be achieved if Te Tiriti partners are enabled to work together and individually in a way that respects kāwanatanga (the right for Government to govern) and rangatiratanga (the right for Māori to make decisions for Māori)."

- 4.7 To us, rangatiratanga is the ability of Ngāi Tahu to arrange and manage our own affairs, autonomously, for the benefit of our whānau and communities. In modern New Zealand, our rangatiratanga will often, but not always, be exercised in conjunction with the Crown exercising its kāwanatanga.
- 4.8 It is important too for the Ministry to understand that rangatiratanga does not just impact Māori, but also the wider community, and believe the following better reflects this: "*This acknowledges that much can be achieved if Te Tiriti partners are enabled to work together and individually in a way that respects kāwanatanga (the right for Government to govern) and rangatiratanga (the right for mana whenua to make decisions for their taonga and takiwā.*"
- 4.9 Q8 Te Rūnanga supports the Commission's recommendations that the Crown partner with iwi on the range of national plans and strategies. Given the breadth of Ngāi Tahu interests, and the range of Ngāi Tahu Holdings Corporation businesses and investments, Te Rūnanga expects to be involved in the development of a National Energy Strategy, a Circular Economy, a Bioeconomy, a National Low-emission Freight Strategy, plans to decarbonise the industrial sector and a Building Transformation Plan. Appropriate Tiriti Partner engagement must occur for each, and Ngāi Tahu must play an active role, we are well equipped to partner with central and local government, as natural agents of change and intergenerational investors within the Ngāi Tahu takiwā.
- 4.10 Q9 The importance of a Māori-led approach to the transition was emphasised by the Commission. Te Rūnanga expects to be heavily involved in Māori-led strategy. Within Ngāi Tahu we have significant experience, skills and expertise in the climate change kaupapa having developed our Climate Change Strategy that touched on all tribal activities. We hope to utilise these skill sets to protect and enhance the rights, interests and values of Ngāi Tahu whānui moving forward.
- 4.11 Q10 It is important that our whānau are resourced to be involved and provide their skills and expertise in the development of these strategies. And that sufficient time and support is provided to ensure participation. Often whānau will be volunteering their own time and knowledge to engage with and contribute to Crown processes.
- 4.12 Q11 Te Rūnanga o Ngāi Tahu Group has been measuring and auditing its emissions profile through the Toitū for a number of years. The information provided through this process has been extremely useful and would be useful for our Papatipu Rūnanga and whānau.

#### **Equitable Transition**

- 4.13 Te Rūnanga emphasises the need for transition to be just. The Crown must ensure that existing systemic social inequalities are not exacerbated by this transition. Te Rūnanga has consistently encouraged the Crown to work alongside iwi to explore how this transition phase can serve as a vehicle to proactively address those inequalities.
- 4.14 Q13 Te Rūnanga agrees with the objectives for an Equitable Transition Strategy and highlights that it is crucial Ngāi Tahu is involved in any decisions or discussions on the transition for Ngāi Tahu whānui.
- 4.15 Q15 The inclusion of a diverse cross-section of views and impacts is essential in the development of an Equitable Transitions Strategy. There is a significant risk of the voices of the most significantly impacted parts of our community being missed in Government consultation. An approach that supports Māori and Pasifika to engage within their communities in a Māori and Pasifika way will support the creation of a more robust strategy than a passive consultation approach.
- 4.16 Q16 Those that are most economically vulnerable within our community are those without the financial resources to support their transition into a decarbonised economy. A broadening of the Government's use of economic instruments including taxation to support those within vulnerable communities will be essential to ensure a just and equitable transition to a decarbonised economy.
- 4.17 Q17 Providing a clear strategic roadmap through to 2050 to facilitate investment public, private, and Public-Private Partnerships will provide the necessary confidence for the right level of investment to support the creation of new 'green industries' within regions that have historically relied upon fossil fuel-rich industries.
- 4.18 Q18 At present, publicly available climate-based reports and tools are not user-friendly as much of the reporting available is written by scientists, for scientists. The development of simplified tools that allow individuals and communities to understand the climate-related impacts within their own community will support transition planning.

#### **Government Accountability and Coordination**

4.19 Te Rūnanga supports coordination across Government agencies to ensure a cohesive approach is taken to climate change.

## Funding and Finance

4.20 Te Rūnanga is aware that meeting the emission budgets will require significant investment from the Crown, and requests that funding be made available for iwi/hapū/whānau to transition their businesses or investments to become aligned with the direction of emissions reduction budgets.

- 4.21 The fact that our takiwā extends over roughly half the country means that the investments we make in our marae, our rohe and regions make a significant, growing contribution to local economies. As we work to be a low-emissions iwi within our tribal lands, we will bring about change from the flax roots up.
- 4.22 Within Ngāi Tahu, there are many initiatives that Te Rūnanga and Papatipu Rūnanga could be undertaking to reduce our emissions, and it is important that funding and finance is available in an accessible way. Te Rūnanga request that adequate funding is provided to enable iwi to transition to a low emissions future and enhance a just and equitable transition.

#### **Emissions Pricing**

- 4.23 Ngāi Tahu Holdings Corporation has significant investments in both forestry and agriculture. Te Rūnanga owns approximately 1100 hectares of Emissions Trading Scheme ("ETS") registered post-1989 forest land on the West Coast of the South Island planted between 1997 and 2007. In addition, Te Rūnanga will be purchasing and/or converting existing land to forestry which will be eligible for ETS entry. Therefore, Te Rūnanga has a considerable interest in ETS related matters.
- 4.24 Te Rūnanga understands that significant reductions and offsets are required between now and mid-century to contribute actively to a 1.5 2 °C limit of global warming. Achieving direct emissions reductions in businesses that face ETS liabilities will be an important means of meeting that target. Te Rūnanga has repeatedly stated our expectation that a well performing ETS would incorporate all sectors and all gases on a level playing field.
- 4.25 It is important that the New Zealand Units supply are set with the clear objective of driving down the emissions profile of participant businesses, linked to the carbon zero target and the emissions budgets.
- 4.26 Te Rūnanga recommends allowing for aggregated on-farm plantings (including wetlands, riparian margins, shelter belts and reserve areas) to be considered legitimate offsets.

#### Research, science, and innovation

- 4.27 From before the time our tupuna travelled to Aotearoa, research, science and innovation have been a core quality to Māori. It is important that this is recognised and utilised as we move forward to a carbon zero future. Mātauranga Māori has become increasing important within New Zealand's Research, Science and Innovation space. Te Rūnanga emphasises the importance of adequate funding and respect for our mātauranga Māori.
- 4.28 We support a focus on research on research, science and innovation and improved pathways for commercial innovation. There needs to be a focus on areas of high importance, such as low-emissions transport and land use options that have potential for the greatest impact on the New Zealand's emissions profile.

#### **Behaviour Change**

4.29 Te Rūnanga supports the four objectives of influencing behaviour change to assist the transition to a low emissions and climate resilient future. Te Rūnanga suggests a 'for Māori, by Māori' programme to ensure the public engagement campaign is connecting with our whānau.

#### **Circular and Bioeconomy**

- 4.30 Te Rūnanga supports the move to a circular and bioeconomy. Within our own operations we are aiming to eliminate all avoidable waste generations and to reuse, recycle or otherwise repurpose any remaining waste.
- 4.31 The proposed Circular Economy Strategy must be developed in collaboration with the Treaty Partner. Te Rūnanga request involvement in the development of this Strategy, as a circular and bioeconomy closely aligns with our views on resource management.

#### Transport

- 4.32 Te Rūnanga supports the four new transport targets and associated actions proposed for reducing transport emissions.
- 4.33 In the discussion document it is stated the Government will support iwi to engage in the co-design of policies relating to emissions reduction in transport. Te Rūnanga must be involved in this, given our significant transport interests, and expect that any regional groups within the Ngāi Tahu takiwā are developed in partnership.
- 4.34 With each focus area, it is critical that the Government ensures an equitable and just transition. Many of our Ngāi Tahu whānui do not have the means to either afford electric vehicles or utilise them given the remote locations around the takiwā our people live in. This applies to public transport also.
- Focus 1 Reducing reliance on cars
- 4.35 Te Rūnanga agrees that the overall target is in line with the Commission's recommendations.
- 4.36 It is important for the Government to note that the highest region for vehicle ownership per capita is Canterbury, with transport contributing to 54% of Christchurch's emissions. In the National Land Transport Plan for 2021-24, Christchurch is allocated \$246m, which is significantly less than Wellington (\$1.2B) and Auckland (\$2.8b). There is concern that the regional distribution of Budget 1 allocations for transport is unlikely to create the step-change through transport modality in Te Waipounamu, increasing the risk of unjust transitions as carbon prices rise throughout the plan period.
- 4.37 Te Rūnanga suggests increasing the use of a broader suite of economic instruments available for use in urban areas beyond congestion charging to rebalance the economics of transport modality decisions.

4.38 More urgency should be provided to investigating the potential for alternative transport modes for rural and provincial areas.

Focus 2 – Rapidly adopting low-emissions vehicles and fuels

- 4.39 The high capital cost for electric vehicles options makes these options unattainable for low income-families, even with rebates. Incentives to increase shared transportation services (bikes and vehicles) should form part of the holistic retooling of New Zealand transport.
- 4.40 Te Rūnanga suggests that the Government continues to revise emissions standards actively and consistently for imported vehicles to ensure the introductions to New Zealand's fleet contribute to emission reduction goals.
- 4.41 Te Rūnanga suggests accelerating scoping a national electric vehicle infrastructure plan to support the electrification of New Zealand's transport fleet. Of specific focus should be rural and provincial regions that are generally less well supported with electric vehicle charging infrastructure.
- 4.42 Greater recognition is needed of the holistic opportunities that the electric vehicle provides as additional battery capacity for vehicle-to-grid demand management.
- 4.43 Te Rūnanga supports the introduction of a moratorium on the consent of new fossil fuel stations.
- Focus 3 Beginning work to decarbonise heavy transport and freight
- 4.44 Targeted support should be made available for innovation in domestic biofuel production to support an efficient transition of the heavy vehicle sector away from carbon rich fuels.
- 4.45 A lack of options available within the utility space makes it challenging for farming and rural communities to move to lower emissions alternatives. Consideration should be made to support green hydrogen to conquer the hurdle rate for heavy transport.
- 4.46 Te Rūnanga supports the decarbonisation of heavy transport through active management of emissions standards.
- 4.47 It is important to ensure that the national action plan on maritime emissions, New Zealand rail plan, and National Freight and Supply Chain strategy are aligned to provide a holistic overview of the future of heavy transport and freight within Aotearoa.

#### **Energy and Industry**

4.48 Te Rūnanga agrees that an Energy Strategy will be required to ensure a successful and equitable transition of the energy system. Ngāi Tahu expects that the Crown will work together with us as Te Tiriti partners to develop a transition policy that will give effect to the rangatiratanga of mana whenua, and

ensure that our rights and interests, and the needs of our communities, are well provided for.

- 4.49 Q60 Te Rūnanga supports the Government taking an ambitious approach when setting renewable energy targets.
- 4.50 Te Rūnanga supports an increase in transparency and corporate responsibility (eg requiring Energy and Emissions Reporting scheme) for all large energy users.
- 4.51 Q68 The Government should support the development of low-emissions fuels to support the decarbonisation of industry.
- 4.52 Any funding and resource support from the Government made available to businesses must provide targeted support to Māori businesses.
- 4.53 Te Rūnanga notes that these alternative energy resources represent opportunities for iwi resource owners and managers. Ngāi Tahu involvement is essential in any undertaking in the Ngāi Tahu takiwā.
- 4.54 It is important to note that while hydrogeneration is a "clean" energy, it is not without its impacts. The waterways (and associated cultural practices) within the Ngāi Tahu takiwā have been significantly impacted by energy generation.

#### **Building and Construction**

- 4.55 Q70 Te Rūnanga supports the Commission's recommendations of introducing mandatory participation in energy performance programmes for existing commercial and public buildings.
- 4.56 Q75 For the Government to ensure the needs and aspirations of iwi are effectively recognised, understood and considered with the Building for Climate Change programme it needs to work with iwi, as Te Tiriti Partners.
- 4.57 Q81 Ngāi Tahu are passionate in our desire for whānau to be in warm, dry and safe homes, and believe that all New Zealanders have a fundamental human right to adequate housing which is a significant factor in determining people's health and wellbeing and their ability to sustain good health.
- 4.58 There is significant research to show that Māori are disproportionally represented in negative statistics relating to housing, for example 37% of Ngāi Tahu whānui live in rental accommodation (Ngāi Tahu State of the Nation 2017). Given the current income inequalities, declining home ownership rates and increasing number of whānau renting it is incredibly important that all New Zealanders have a warm, dry, safe and durable home to live in. Te Rūnanga expects the Government to work with us in ensuring that our Ngāi Tahu whānau benefit from the improved thermal performance standards for buildings.

#### Agriculture

- 4.59 Aotearoa is acknowledged as a world leader in agriculture, and Ngāi Tahu Farms strive to maintain above 'best practice' in their mahi. It is important that we maintain this role, and Te Rūnanga supports efforts to reduce emissions and increase environmental sustainability in the agriculture sector. Te Rūnanga encourages resource and efforts being put towards achieving best practice across the primary sector.
- 4.60 To support emissions reductions in the agriculture sector and sustainable practices their needs to be recognition, funding and reimbursement for those farmers who are already going above good management practice on farm and are 'first out of the gate' in reducing their on-farm emissions.
- 4.61 The mahi of *He Waka Eke Noa* Primary Sector Climate Action Partnership is referenced throughout the Agriculture section of the Emissions Reduction Plan discussion document, however many farmers are not aware of the work that is being undertaken. Te Rūnanga recommends *He Waka Eke Noa* undertaking workshops throughout the country to ensure farmers are aware if the Partnership and understand the work being undertaken. Te Rūnanga and Ngāi Tahu Farms would welcome a hui.
- 4.62 Q84 Ahead of implementing pricing mechanisms for agriculture emissions it is important that provide clear information and direction to farmers on practices they can be adopting to reduce their emissions, in conjunction with their other best practices for example nitrogen leaching and phosphorous run off.
- 4.63 Q85 In terms of research and development, Te Rūnanga suggests that more is required to expedite the development of mitigating technologies and further investment is required to validate the efficacy of new technologies being developed so they can be recognised and adopted by current regulation tools. this should be in addition to ongoing investment into the research and development of the methane inhibitor injections and low nitrogen supplementary feeds.
- 4.64 Q87 To help reduce barriers to changing land use the Government should review current rules and regulations to ensure they allow for a transition to more sustainable land use, for example it is currently difficult for farms to graze stock on mixed cropping rotation when this land use is better for the environment.

#### Waste

- 4.65 Te Rūnanga strives to effectively manage our operations to reduce our waste and maximise the use of our resources.
- 4.66 Q89 Te Rūnanga supports the Commission's recommended emissions reduction target for the waste sector.
- 4.67 Q90 Te Rūnanga supports more funding for education and behaviour change, particularly for businesses that are reaching a Māori audience such as Pare Kore, which has significant experience working with whānau and marae.
- 4.68 Q92 Te Rūnanga supports the proposal to ban the disposal of food, green

and paper waste at landfills for all households and businesses by 1 July 2030, if there are alternatives ways to recycle and divert this waste.

- 4.69 Q93 Te Rūnanga supports the proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas, so long as appropriate regional infrastructure is available. Central Government financial support may be necessary in some provincial and rural areas due to the potential financial burden that this would apply on small rating bases.
- 4.70 Q94 Te Rūnanga supports the proposals for landfill gas capture systems at landfill sites that are suitable.
- 4.71 Q95 Te Rūnanga reservedly supports a more standardised approach to collective systems for household and businesses, which priorities separating recyclables such as fibre, food and garden waste. Central Government financial support may be necessary in some provincial and rural areas due to the potential financial burden that this would apply on small rating bases.
- 4.72 Q96 Te Rūnanga does not support this initiative, as it shifts the burden of responsibility from the disposer of waste to the transfer station. Support for education and behaviour change is preferrable to reactively managing waste streams at transfer stations. Reactive waste management is likely to be less economically efficient than education.
- 4.73 Regulation is required around materials that are sold as compositable e.g., commercially compostable materials; and how they are properly accounted for within the waste stream.

#### Forestry

- 4.74 Te Rūnanga believe emissions pricing should incentivise afforestation. It is important that the Government provide clear signals to forestry owners on what the future holds for them. Given the longevity of tree crops it is important that our forestry owners have all the information required to make informed decisions. It is also important that forestry owners have the flexibility to utilise their land in an effective manner.
- 4.75 Q112 Te Rūnanga supports the eradication of pest species to increase carbon sequestration, among a range of other benefits such as protecting taonga species, increasing biodiversity, and importantly providing opportunities for mana whenua to connect with the whenua and reviving mātauranga Māori. Ngāi Tahu whānui are involved in a range of initiatives throughout the takiwā, including Predator Free 2050, and would welcome further discussions with the Government on how best to eradicate pest species within our takiwā and the carbon sequestration and storage benefits this could provide.
- 4.76 Q113 Within the Ngāi Tahu takiwā there has been significant deforestation and draining of wetlands, which has resulted in biodiversity loss and also the loss of the cultural practices associated with these places and species such as mahinga kai and rongoā. Papatipu Rūnanga are actively engaged in a range of afforestation and restoration efforts.

- 4.77 Te Rūnanga supports incentives for afforestation, and protection of the remaining native forests and wetlands. We encourage the Government to recognise the benefits not just of carbon sequestration but the also the many other benefits for example increased access for cultural practices, increased biodiversity, erosion control and improvements to water quality.
- 4.78 Te Rūnanga has regularly expressed concern about on-going default to exotic species over indigenous species. Commercial afforestation is almost entirely exotic, with legislative and regulatory settings favouring exotics. Te Rūnanga would like to see the exploration of incentives for the use of indigenous species, with all the co-benefits that flow from that.
- 4.79 It is important that the role of existing forests, small blocks of trees, soils and wetlands have been acknowledged. Te Rūnanga recommends the Government undertake the further work recommended by the Commission in understanding their potential and how to account for this.

# APPENDIX ONE: NGĀI TAHU CLAIMS AREA



# APPENDIX TWO: TEXT OF CROWN APOLOGY

The following is text of the Crown apology contained in the Ngāi Tahu Claims Settlement Act 1998.

## Part One – Apology by the Crown to Ngāi Tahu

#### Section 5: Text in Māori

The text of the apology in Māori is as follows:

- 1. Kei te mõhio te Karauna i te tino roa o ngā tūpuna o Ngāi Tahu e totohe ana kia utu mai rātou e te Karauna—tata atu ki 150 ngā tau i puta ai tēnei pēpeha a Ngāi Tahu arā: "He mahi kai tākata, he mahi kai hoaka". Nā te whai mahara o ngā tūpuna o Ngāi Tahu ki ngā āhuatanga o ngā kawenga a te Karauna i kawea ai e Matiaha Tiramōrehu tana petihana ki a Kuini Wikitoria i te tau 1857. I tuhia e Tiramōrehu tana petihana arā: 'Koia nei te whakahau a tōu aroha i whiua e koe ki runga i ēnei kāwana... tērā kia whakakotahitia te ture, kia whakakotahitia ngā whakahau, kia ōrite ngā āhuatanga mō te kiri mā kia rite ki tō te kiri waitutu, me te whakatakoto i te aroha o tōu ngākau pai ki runga i te iwi Māori kia noho ngākau pai tonu ai rātou me te mau mahara tonu ki te mana o tōu ingoa.' Nā konei te Karauna i whakaae ai tērā, te taumaha o ngā mahi a ngā tūpuna o Ngāi Tahu, nā rēira i tū whakaiti atu ai i nāianei i mua i ā rātou mokopuna.
- 2. E whakaae ana te Karauna ki tõna tino hēanga, tērā i takakino tāruaruatia e ia ngā kaupapa o te Tiriti o Waitangi i roto i āna hokonga mai i ngā whenua o Ngāi Tahu. Tēnā, ka whakaae anō te Karauna tērā i roto i ngā āhuatanga i takoto ki roto i ngā pukapuka ā-herenga whakaatu i aua hokonga mai, kāore te Karauna i whai whakaaro ki tāna hoa nā rāua rā i haina te Tiriti, kāore hoki ia I whai whakaaro ki te wehe ake i ētahi whenua hei whai oranga tinana, whai oranga ngākau rānei mō Ngāi Tahu.
- 3. E whakaae ana te Karauna tērā, i roto i tāna takakino i te wāhanga tuarua o te Tiriti, kāore ia i whai whakaaro ki te manaaki, ki te tiaki rānei i ngā mauanga whenua a Ngāi Tahu me ngā tino taonga i hiahia a Ngāi Tahu ki te pupuri.
- 4. E mõhio ana te Karauna tērā, kāore ia i whai whakaaro ki a Ngāi Tahu i runga I te ngākau pono o roto i ngā tikanga i pūtake mai i te mana o te Karauna. Nā tāua whakaaro kore a te Karauna i puaki mai ai tēnei pēpeha a Ngāi Tahu: "Te Hapa o Niu Tīreni". E mõhio ana te Karauna i tāna hē ki te kaipono i ngā āhuatanga whai oranga mō Ngāi Tahu i noho põhara noa ai te iwi ia whakatupuranga heke iho. Te whakatauākī i pūtake mai i aua āhuatanga: "Te mate o te iwi".
- 5. E whakaae ana te Karauna tērā, mai rāno te piri pono o Ngāi Tahu ki te Karauna me te kawa pono a te iwi i ā rātou kawenga i raro i te Tiriti o Waitangi, pērā anō tō rātou piri atu ki raro i te Hoko Whitu a Tū i ngā wā o ngā pakanga nunui o te ao. E tino mihi ana te Karauna ki a Ngāi Tahu mō tōna ngākau pono mō te koha hoki a te iwi o Ngāi Tahu ki te katoa o Aotearoa.
- 6. E whakapuaki atu ana te Karauna ki te iwi whānui o Ngāi Tahu i te hōhonu o te āwhitu a te Karauna mō ngā mamaetanga, mō ngā whakawhiringa i pūtake mai nō roto i ngā takakino a te Karauna i takaongetia ai a Ngāi Tahu Whānui. Ewhakaae ana te Karauna tērā, aua mamaetanga me ngā whakawhiringa hoki I hua mai nō roto i ngā takakino a te Karauna, arā, kāore te Karauna i whai i ngā tohutohu a ngā pukapuka ā-herenga i tōna hokonga mai i ngā whenua o Ngāi Tahu, kāore hoki te Karauna i wehe ake kia

rawaka he whenua mō te iwi, hei whakahaere mā rātou i ngā āhuatanga e whai oranga ai rātou, kāore hoki te Karauna i hanga i tētahi tikanga e maru motuhake ai te mana o Ngāi Tahu ki runga i ā rātou pounamu me ērā atu tāonga i hiahia te iwi ki te pupuri. Kore rawa te Karauna i aro ake ki ngā aurere a Ngāi Tahu.

- 7. E whakapāha ana te Karauna ki a Ngāi Tahu mō tōna hēanga, tērā, kāore ia I whai whakaaro mō te rangatiratanga o Ngāi Tahu, ki te mana rānei o Ngāi Tahu ki runga i ona whenua ā-rohe o Te Wai Pounamu, nā rēira, i runga i ngā whakaritenga me ngā herenga a Te Tiriti o Waitangi, ka whakaae te Karauna ko Ngāi Tahu Whānui anō te tāngata whenua hei pupuri i te rangatiratanga o roto I ōna takiwā.
- 8. E ai mõ ngā iwi katoa o Aotearoa e hiahia ana te Karauna ki te whakamārie I ngā hara kua whākina ake nei—otirā, ērā e taea i nāianei i te mea kua āta tau ngā kõrero tūturu ki roto i te pukapuka ā-herenga whakaritenga i hainatia i te 21 o ngā rā o Whitu hei tīmatanga whai oranga i roto i te ao hõu o te mahinga tahi a te Karauna rāua ko Ngāi Tahu.

#### Section 6: Text in English

The text of the apology in English is as follows:

 The Crown recognises the protracted labours of the Ngāi Tahu ancestors in pursuit of their claims for redress and compensation against the Crown for nearly 150 years, as alluded to in the Ngāi Tahu proverb 'He mahi kai takata, he mahi kai hoaka' ('It is work that consumes people, as greenstone consumes sandstone'). The Ngāi Tahu understanding of the Crown's responsibilities conveyed to Queen Victoria by Matiaha Tiramorehu in a petition in 1857, guided the Ngāi Tahu ancestors. Tiramorehu wrote:

> "This was the command thy love laid upon these Governors ... that the law be made one, that the commandments be made one, that the nation be made one, that the white skin be made just equal with the dark skin, and to lay down the love of thy graciousness to the Māori that they dwell happily ... and remember the power of thy name."

- 2. The Crown hereby acknowledges the work of the Ngāi Tahu ancestors and makes this apology to them and to their descendants.
- 3. The Crown acknowledges that it acted unconscionably and in repeated breach of the principles of the Treaty of Waitangi in its dealings with Ngāi Tahu in the purchases of Ngāi Tahu land. The Crown further acknowledges that in relation to the deeds of purchase it has failed in most material respects to honour its obligations to Ngāi Tahu as its Treaty partner, while it also failed to set aside adequate lands for Ngāi Tahu's use, and to provide adequate economic and social resources for Ngāi Tahu.
- 4. The Crown acknowledges that, in breach of Article Two of the Treaty, it failed to preserve and protect Ngāi Tahu's use and ownership of such of their land and valued possessions as they wished to retain.
- 5. The Crown recognises that it has failed to act towards Ngāi Tahu reasonably and with the utmost good faith in a manner consistent with the honour of the Crown. That failure is referred to in the Ngāi Tahu saying 'Te Hapa o Niu Tireni!' ('The unfulfilled promise of New Zealand'). The Crown further recognises that its failure always to act in good faith deprived Ngāi Tahu of the opportunity to develop and kept the tribe for several

generations in a state of poverty, a state referred to in the proverb 'Te mate o te iwi' ('The malaise of the tribe').

- 6. The Crown recognises that Ngāi Tahu has been consistently loyal to the Crown, and that the tribe has honoured its obligations and responsibilities under the Treaty of Waitangi and duties as citizens of the nation, especially, but not exclusively, in their active service in all of the major conflicts up to the present time to which New Zealand has sent troops. The Crown pays tribute to Ngāi Tahu's loyalty and to the contribution made by the tribe to the nation.
- 7. The Crown expresses its profound regret and apologises unreservedly to all members of Ngāi Tahu Whānui for the suffering and hardship caused to Ngāi Tahu, and for the harmful effects which resulted to the welfare, economy and development of Ngāi Tahu as a tribe. The Crown acknowledges that such suffering, hardship and harmful effects resulted from its failures to honour its obligations to Ngāi Tahu under the deeds of purchase whereby it acquired Ngāi Tahu lands, to set aside adequate lands for the tribe's use, to allow reasonable access to traditional sources of food, to protect Ngāi Tahu's rights to pounamu and such other valued possessions as the tribe wished to retain, or to remedy effectually Ngāi Tahu's grievances.
- 8. The Crown apologises to Ngāi Tahu for its past failures to acknowledge Ngāi Tahu rangatiratanga and mana over the South Island lands within its boundaries, and, in fulfilment of its Treaty obligations, the Crown recognises Ngāi Tahu as the tāngata whenua of, and as holding rangatiratanga within, the Takiwā of Ngāi Tahu Whānui.
- 9. Accordingly, the Crown seeks on behalf of all New Zealanders to atone for these acknowledged injustices, so far as that is now possible, and, with the historical grievances finally settled as to matters set out in the Deed of Settlement signed on 21 November 1997, to begin the process of healing and to enter a new age of co-operation with Ngāi Tahu."



Ministry for the Environment

PO Box 10362

Wellington 6143

Via email <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

REF: Emissions reduction plan consultation

Tēnā koe,

Te Korowai o Ngāruahine Trust (Te Korowai) provides the following comments on the draft Emissions Reduction Plan.

- 1. As the post settlement governance entity (PSGE) for Ngāruahine, Te Korowai has a responsibility to ensure that the interests of Ngāruahine are safe-guarded. This means considering the extent to which any proposed activities may impact those areas under statutory acknowledgement and/or Deed of Recognition (Ngāruahine Claims Settlement Act 2016). This includes:
  - a. the environmental, cultural, and spiritual interests of Ngāruahine within its rohe; and
  - b. the potential or actual impacts on the physical, psychological, cultural, and spiritual wellbeing of Ngāruahine (Te Korowai o Ngāruahine Trust Deed).
- 2. These comments do not undermine the mana motuhake of the 6 Hapū of Ngāruahine, nor do they attempt to supplant the mana whenua and mana moana status of those 6 Hapū.

#### 3. Principles for Transition

Partnership – This term is used ambiguously throughout the document. There are two themes that emerge from its use.

Te Tiriti o Waitangi

- strengthening the partnership approach and actively supporting iwi/Māori with this effort.
- apply Māori values and mātauranga Māori to the transition.
- involve a variety of Māori voices in the design and development of the transition.

Private Sector Partnership

- support the flow of private investment towards climate-positive outcomes for the growth of the green finance market.
- continued economic growth.
- Integrating reduction measures with strategies for industry, infrastructure, housing and urban development, fiscal management and plans for building resilience to the physical effects of climate change.

What needs to be clear is who are the partners that the principles are refering to. Ambiguity is again evident in interchangeable use of Iwi and Māori when refering to Te Tiriti partnership.

- Are the post settlement governance entities the partner?
- Is it urban Māori authorities?
- Could it include Māori land owners?

A clear and concise definition of who is the Treaty partner should be included in an interpretation clause. The lack of a clear definition potentially causes division and confusion with the Crown 'cherry picking' who it will engage with and is therefore legitimate.

The Tiriti partnership should be at a governance level and define the key approaches. The Crown has a responsibility to meet its international committments and its obligations as a Treaty partner. The current configuration of the principles will once again see lwi taking a passive role in the emission reduction plan. In this role we are symbolically included and when international committments are pushed to the fore, informed of consulted on what will happen. This is the lowest form of involvement and amounts to tokenism where iwi are considered another community of interest to be taken into account with all other stakeholders. This is far different to the role of a Treaty partner.

#### 4. Making an Equitable Transition

Te Korowai are very interested in any employment opportunities for our uri. The Kānoa Regional Economic Partnerships and He Poutama Rangatahi tend to focus on developed, urban centres. This automatically disadvantages Ngāruahine as we are a rural iwi with a large rangatahi cohort.

We suggest measuring and reporting on:

- Engagement with Māori/Iwi/Hapū;
- Funding allocated to engagement with Māori/Iwi/Hapū;
- Identifying how Māori/Iwi/Hapū feedback or ideas have been integrated into strategic planning or where they haven't the reasons why i.e. international committments.
- Social procurement including benefits identified as accruing specifically to Māori.

#### 5. Government Accountability and Co-ordination

Implementation of the plan should develop and identify opportunities for Māori/Iwi to access finance and invest in reductions activities.

Allocating free industrial NZU's sends a poor signal to trade exposed and emissions intensive industries. This is in effect rent that is treated as a property right by industries.

#### 6. Research, Science and Innovation

Again, reference is made to Māori co-designing mechanisms to assist Māori start ups. Who are these Māori – are they Māori staff who work for Crown Research Institutes. Be clear on who you are talking about.

#### Vision Mātauranga

Mātauranga Māori is intricately connected to Kaupapa Māori. The intention is not to integrate Mātauranga into the implementation of Crown designed processes. It should be to change power structures to respond to Mātauranga Māori and Western Based science equally in partnership.

#### 7. Moving Aotearoa to a Circular Economy

A circular economy may not align with the myth of perpetual quantitative economic growth. A thriving economy may mean an increase in quality rather quantity. How do you measure increases in quality with quantitative tools? Different indicators are needed to identify improvement in quality such as a reduction in the amount of unpaid work undertaken by women, or an increase in the amount of vegetables grown and consumed by households.

Barriers to a bioeconomy are numerous for rural communities and involve problems of scale and capacity for public transport, inefficient and costly collection and distribution networks for developing waste reduction measures, and a lack of co-ordinated infrastructure services.

#### 8. Transitioning Key Sectors

We support the steps to reduce emissions in the transport, energy and industry, waste and HFC's, building and construction and forestry. For agriculture it is acknowledged that this sector, especially dairy, is a critical industry to the New Zealand economy. It also has a disproportionate affect on the health and mauri of our waterways. One of the reasons for this is that the environmental externalities of the industry are socialised while the profits are privatised.

Research funding has been chanelled into this sector for many years with little to show for it. Solutions centre around finding different ways to do exactly the same thing, at the same intensity while reducing impacts on the environment. It should be apparent by now that we cannot continue to do things as we have done in the past. Solutions need to focus on adopting different land uses, including foresty, to reduce impacts on our waterways and atmosphere. This may include industrial factory type dairy farming which captures externalities while protecting the taiao. How much longer shall we kick the can down the road and place the burden on future generations who will inherit the diminishing marginal returns which are embedded in the sector?

The taiao needs to be valued at a higher discount rate than that currently being applied. Enough research funding has been spent trying to maintain the legitimacy of the dairy industry. It is time to research different land uses which may not bring in the same returns as dairy, but they will have to internalise the environmental impacts they create. Māori land will be impacted by these changes but absorbing a decrease in returns is in line with values of intergenerational equity and kaitiakitanga.

#### 9. Waste and HFC's

We are particularly keen to explore the options around reducing organic waste disposal to landfill. Te Korowai supports increased funding for education and behaviour change initiatives to healp households, communities, businesses and marae reduce their organic waste. We would also support a ban on the disposal of food, green and paper waste at landfills for all households and businesses at

an earlier date than 1 January, 2030. The issue is establishing alternative ways to recycle or process this waste.

#### 10. <u>F gases</u>

Te Korowai supports the phasing out of finished products which contain refrigerants with a high GWP. This is of course dependent on the availability of alternative products with lower GWP and affordability of those alternatives. Alternatives with lower GWP should be subsidised by central government to incentivise their purchase and use.

#### 11. Forestry

While we acknowledge exotic forests as a low cost way to meet 2050 net zero targets, we believe a simplistic focus on short-term sequestration could lead to a 'green' desert of exotic species. Although native species are slower growing, they provide greater long term benefits such as enhanced water quality, habitat for native fauna and materials for traditional and contemporary Māori uses. Forestry and forestry systems should have a long term focus on transition from exotic to native species as net zero targets are approached. Local wood and wood residues should be better utilised in the construction industry where we basically export raw logs and import value added timber.

#### 12. Conclusion

The draft plan is not clear on who exactly treaty partners are. Using terminology such as Māori and iwi interchangeably further complicates the situation. Clarity is required on just who is the Crowns treaty partner to prevent tokenist or superficial consultation. Te be clear – Iwi are treaty partners established and mandated through the Treaty Settlement process. They are not merely another group to be consulted as a community of interest alongside businesses, industry organisations and communities. The draft contains some really good approaches to reducing emissions around bioeconomies, waste reduction and F gases. However, the time has come to address agricultural emissions and we can no longer continue to cover for a sector that has had 30 years to address their impacts on the taiao. Concessions and the right to pollute need to removed from the dairy industry in a structured and systematic way. Māori land owners will be negatively affected by any changes but they will lead they way if they are algned with the values of Kaitiakitanga and intergenerational equity.

Ngā mihi



Pouuruhi Taiao Environmental Lead Te Korowai o Ngāruahine Trust 24 Nov 2021



Manatū Mō Te Taiao – Ministry for the Environment 23 Kate Sheppard Place Pipitea WELLINGTON 6011

Kia ora

Tourism Industry Aotearoa Submission to: Te hau mārohi ki anamata – Transitioning to a low-emissions and climate-resilient future

Tourism Industry Aotearoa (TIA) welcomes the opportunity to comment on the Government consultation document *Te hau mārohi ki anamata – Transitioning to a low-emissions and climate-resilient future*.

We view this work to be of utmost importance in mapping out Aotearoa New Zealand's pathway to reaching net zero emissions of long-lived gases by 2050.

We support the overall intent and ambition of the draft plan. Our comments are focussed on how the Plan can be strengthened to better recognise and meet the needs of the tourism industry, and indeed how the Plan can assist the tourism industry to achieve its own ambitions ahead of those set out in the Plan.

#### **Tourism Industry Aotearoa**

TIA is the peak body for the tourism industry in New Zealand. With around 1,200 members, TIA represents a wide range of tourism-related activities including hospitality, accommodation, adventure and other activities, attractions, retail, airports and airlines, transport, as well as related-tourism services.

Strategically, TIA is sharply focused on ensuring the sustainable future of the industry and this is clearly articulated in our key guiding documents and programmes:

- **Strategy.** TIA owns the tourism industry's strategic framework, *Tourism 2025* & Beyond – A Sustainable Growth Framework Kaupapa Whakapakari Tāpoi. This has the Vision of 'Growing a sustainable tourism industry that benefits New Zealanders'. This framework guides all TIA work with and across the industry.
- Sustainability. TIA launched the New Zealand Tourism Sustainability Commitment - He kupu taurangi kia toitū ai te tāpoitanga in 2017. The TSC has the Vision of 'Leading the world in sustainable tourism'. It is activated through the actions of individual businesses and entities who join the TSC. With almost universal voluntary industry uptake, the TSC has been made a standard part of being a TIA member.

The TSC is based around 12 Commitments that set out the actions or behaviours for TSC members to activate within their operations. This is a balanced scorecard approach using Economic, Community, Visitor and Environment quadrants. The Commitments align to both the UN's Sustainable Development Goals and the Government's Wellness Framework.

The Commitment focussed on reducing carbon use by businesses is:

Commitment 11: Carbon Reduction. We act urgently to contribute to Aotearoa New Zealand's transition to a net zero carbon economy.

• Tourism Carbon Challenge. TIA is launching this initiative on 29 November 2021 to establish a clear leadership position and to drive a concerted effort to decarbonise the tourism industry. It serves to deepen the work we are already doing with the TSC. This is a framework for how the tourism industry can make substantive changes over time. Importantly, the framework has four key themes: policy, people in the industry, innovation and accountability. We have identified an extensive list of actions that can give effect to this framework, from which we will prioritise the most important actions. When launched, we will provide this as supplementary information to this submission.

Notably, the 'Policy' theme is very much about the need for the overarching policy settings we have in New Zealand to be supportive of what we are seeking to achieve to decarbonise the tourism industry. The Emission Reduction Plan will form a very important part of this and so we have the very clear objective that the policy and programme settings of government are clear, strong and easy to use by the tourism industry. Only by having such a national policy framework in place can tourism itself meet its own objectives.

#### Our Understanding of the Context

The tourism industry (pre-COVID-19) made up around one tenth of the New Zealand economy as measured by direct and indirect GDP and employment, and 21% of our export earnings. As such, it has a strong interest in the key strategic drivers that we face at global, national and industry levels. At the very top of these drivers is the reality that climate change is increasingly impacting the global community.

In the past month, the international community convened at the 2021 UN Climate Change Conference (COP26) to develop more ambitious commitments to limit greenhouse gases, and New Zealand is fully committed to playing its part. At COP26, the Government announced the commitment to reduce emissions by 50% (on 2005 levels) by 2030, a significant step up from the previous goal to cut emissions by 30%. These commitments have been used to frame our own ambitions for decarbonising the tourism industry.

New Zealand also pledged to support the development of sustainable aviation fuel and zero emissions aircraft by signing up to the *International Aviation Climate Ambition Coalition*. We welcome this given the particular challenges presented by the hard to abate aviation sector where a global response is needed for a global challenge.

#### TIA's Main Areas of Feedback

TIA strongly supports the intent and the substance of the material contained in the consultation document.

However, with the discussion document being light on tourism-specific perspectives, this submission is focused on matters that we feel are particularly important for the tourism industry and for the vital role it plays in providing connectivity between Aotearoa New Zealand and the global community.

Key points of the TIA Submission:

1. Strategic Alignment. The New Zealand tourism industry is fully committed to transitioning to a zero-carbon future as set out in our key strategic documents, our industry sustainability programme and the new Tourism Carbon Challenge.

We are also very aware that the tourism industry is not a singular activity but is made up of parts of many other sectors. Each of these sectors have their own emissions profiles and abilities to change. Some can move quickly, especially if incentivised to do so – such as the electrification of the rental vehicle fleet – whereas others are constrained by technologies and so cannot transition quickly, with aviation the obvious and important example of this. This means while there is a strong strategic imperative to act, the actions themselves will be many and varied, as we have identified in the Tourism Carbon Challenge.

2. Emissions Trading Scheme. TIA views the NZ ETS as the essential platform for reducing carbon emissions given that the increasing price of carbon provides a greater incentive to reduce carbon consumption, and therefore the emissions produced. This system should be allowed to do its job and then be supplemented by other policies where needed.

TIA has some concerns of the price of carbon, how quickly it will change and implications for different sectors. Associated with this, we do not think there is strong awareness of what future carbon prices will be and what this might mean. TIA considers that the historic and current carbon price should be transparently expressed, and also where it is expected to get to. This transparency may be influential in guiding investment decision if the longer-term carbon costs are factored in.

Importantly, TIA considers it essential that the proceeds from the NZ ETS are recycled into programmes that will support and enable emissions reductions, such as innovation, research and development, and more.

3. Enabling Funding. In the consultation document, we note that there is a wide set of existing measures to support the transition. We support these and are keen to see that they are targeted for best effect and have criteria to enable uptake by those that most need support. As the ERP is implemented, these measures will need to be expanded significantly.

Our interest is in ensuring that there is a comprehensive package of enabling funding to support and incentivise action by both small and large entities. This is particularly important in tourism, an industry which is made up of many small business units, with just a few that are large. Across these businesses, there are many firms who are extremely ambitious, motivated, and capable, and there must be ways to support them in their actions. Also, in tourism there is the need for collective or collaborative effort to drive mass change, such as the Tourism Sustainability Commitment, and these initiatives need to be factored in also. The test should be the ability to make a difference.

4. Supporting Policies. TIA welcomes the recognition that to implement the ERP, there will be many policies and settings to change, and TIA considers that these should be developed in conjunction with the industries and sectors that are best informed of what may be needed.

In developing the Tourism Carbon Challenge framework, we have identified some of the important policy settings, and we know that there are many more that will be influential over the period ahead. It is our objective to leverage these policies for best effect as we advance our industry initiative to progressively reduce emissions. Getting the overall policy settings right is essential. We appreciate that this is the purpose of the task at hand, and we are very keen to work with you on an ongoing basis in developing the particular policies and programme responses that are relevant to tourism.

5. Aviation. As one of the most remote of long-haul destinations, New Zealand is highly exposed to the very high carbon footprint per passenger for just getting

here. As such, the development of low-carbon aviation is a clear strategic priority for New Zealand tourism.

Given the strategic importance of aviation connectivity, we consider the consultation document is relatively light on aviation and we think it should be included as a separate Focus Area. That said, there are sector-specific actions identified and we support these and consider that they should be strengthened.

There are emergent non-carbon technologies, but realistically these are many years away from being used in practice. TIA supports the investigation into methods of reducing aviation emissions, including the development of non-carbon technologies like hydrogen and electric aircraft for use in the long term. We note that some interesting progress is being made, such as an announcement by Sounds Air to move to zero-emissions aircraft on its shorthaul flights in coming years, and we need to ensure support for such initiatives. Support for research and development in these areas must be a priority.

We support the establishment of a body focussed on decarbonising aviation that can serve to bring together thinking from across, and beyond, the sector. However, rather than the proposed advisory body, we recommend the establishment of a public-private partnership approach with costs shared and clear associated policy support from Government. Achieving the target of net zero emissions by 2050 while enabling the aviation industry to provide its essential connectivity functions will require the collaboration of both industry and Government.

On a technical note, and as set out in our submission to the Climate Change Commission, we support international aviation being included in New Zealand's 2050 net zero target, ideally separately accounting for passenger movements and freight. This will provide transparency to this very important part of the tourism industry's carbon footprint and will stake out a leadership position for Aotearoa New Zealand. We understand this may happen from 2024.

6. Biofuels. TIA supports the introduction of a Sustainable Biofuels Mandate. We recommend that priority be given to sectors that are the most difficult to decarbonise through other methods. We made this point in our earlier submissions on the Sustainable Biofuels consultation.

Currently, the Sustainable Biofuels Mandate does not separately cover sustainable aviation fuels. We support a specific SAF mandate to incentivise investment in, and uptake of, sustainable aviation fuels, providing certainty to users, investors and producers.

We recognise that developing sustainable aviation fuels at scale will require a comprehensive effort, in which the government will need to play a prominent role with industry partners. Other than incremental aircraft design and deployment advances, sustainable aviation fuels are the only current path towards a step reduction on net carbon emission for long haul aviation, and therefore it should be included prominently in the ERP.

7. Carbon Offsets. Given the nature of the tourism industry and some of its 'hard to abate' characteristics, TIA supports carbon off-setting as a practical means of mitigating non-avoidable carbon emissions. We support these being in New Zealand and being focused on native reforestation or other nature-based offsetting such as wetland restoration. TIA sees many ancillary benefits from this approach including biodiversity and landscape gains, as well as amenity and potential business opportunity gains. However, it is unclear whether New Zealand will have access to sufficient quality nature-based offsets and other methods that may become available such as air capture and storage of carbon. It will be problematic if businesses cannot access sufficient high-quality removal units. We also note that the current NZ ETS settings incentivises planting fast-growing exotic species, and we support the Climate Change Commission's advice that New Zealand should transition to permanent native forests for carbon-sequestration needs before 2050. We feel these is potential for initiatives of scale to make a difference in this area and, for instance, we like the idea of reforesting low value conservation and stewardship land as an innovative approach.

8. Transport. TIA supports the ambition to set a pathway towards zero-carbon transport by 2050, with transport emissions reduced by 13% by 2030 and 41% by 2035. We would like to think that land-based tourism operators will be well ahead of these levels once we get the Tourism Carbon Challenge underway, as EVs become increasingly price-competitive, and as the recharging infrastructure is put in place on a comprehensive basis.

We support the development of well-integrated networks of public transport throughout New Zealand, improving reach, frequency and quality of current networks. From a tourism perspective, public transport is important for connecting those without private vehicles to regions and experiences in a lowemissions way. We submit that the pathway set out is slow, with the actions outlined for the first budget period indicating that most work will be planning and setting out principles. We need to move more quickly.

We support the target to increase zero-emissions vehicles to 30% of the light fleet by 2035. In line with this, we recommend the extension of the clean vehicle discounts to include light commercial vans, as this will reduce the potential cost barrier that may prevent businesses from replacing their current vehicles with EVs. Again, we expect tourism will be a fast mover in transitioning to a low emissions fleet.

9. Research, Science and Innovation. TIA considers research, science and innovation of critical importance in enabling the required shifts that will allow us to reach New Zealand's emission reduction goals. We support the increase of research, science and innovation activity to 2% of GDP given that we see new knowledge and practices as being vital for making a raft of necessary changes. This is of utmost importance.

Accordingly, we submit on the need to build some process in this area, between industry and government. This must have a strategy and a clear research agenda, access to appropriate levels of funding with these operating to a set of allocation criteria that understands tourism and provides support to the most important and fertile areas within and impacting the industry.

As set out earlier, TIA is of the view that the proceeds from the NZ ETS must be recycled into programmes to enable emissions reductions, such as innovation, research and development.

Finally on this point, we are very mindful of the recommendation of the Parliamentary Commissioner for the Environment that one of the best things we could do is to invest heavily in international aviation emission reduction research programmes as they are the ones most likely to drive the most impactful innovations over time. The Commissioner commented that New Zealand could play a very important role in such collaborations. Could something along these lines be part of the ERP as a large and innovative approach?

Further I nput Please do not hesitate to contact me if you have any queries about our feedback, Also, we have indicated we will provide supplementary information over the next few weeks as this material comes available.

Ngā mihi



Strategy and Policy Manager Tourism Industry Aotearoa

#### No. **Question Topic** TIA Response 4 Nature-based solutions It is imperative that we drive to multiple beneficial outcomes where nature is used as part of the solution set. For instance, where offsetting is the last resort, TIA strongly favours carbon sink programmes that generate a wide range of benefits: sinking carbon, restoring native biodiversity, creating amenity assets, creating recreation opportunities and commercial opportunities (such as tourism operation in regenerating forests). Also, biofuel development must be done in ways that do not damage ecological, economic and societal values. TIA supports, for instance, the move to sustainable aviation fuels, but this must be done well so downside risks are avoided. 13 Equitable transition TIA supports initiatives that support their transition to lower emissions. Our experience is that well-intended businesses in the tourism industry struggle to get started, to find the right tools and to embed these practices in their business practices. We find that the key way to do this is to work with individual businesses in a targeted and intensive way. TIA has recently worked with WellingtonNZ to support 12 tourism businesses to become more sustainable and to reduce their carbon footprints. This project is nearly completed and we will be happy to share the project evaluation with you. For SMEs and micro-businesses, decarbonising can be a real impost for businesses that have very limited bandwidth to take on more, and challenging, work. 14 Transition: additional TIA is strongly of the view that industry support measures mechanisms are necessary to achieve system change. 15 Models and Approaches. Existing models must be used and supported to effect the desired changes. For instance, TIA has developed and operates the Tourism Sustainability Commitment that includes 'Carbon Reduction' as one of its 12 Commitments. The TSC has been taken up by 1600 tourism industry members covering the majority of the tourism industry. A good number of these are doing carbon reduction work. TIA is creating more depth and urgency the TSC Carbon Reduction stream. On 29 November, TIA is launching the Tourism Carbon Challenge that has the following mission: The climate challenge is urgent and the tourism industry must be a driver of change. We must act immediately to accurately measure our individual and collective carbon footprint, work together to significantly reduce carbon emissions by 2030 and be net zero carbon before 2050. This is a framework approach that looks to all available levers or pathways that can assist the industry to make rapid progress. The theme areas are Policy, People, Innovation and Accountability. Clearly, the policies and programmes of government will be critical to this Mission, including the Emissions Reduction Plan when it is finalised and implemented. As such, we are very interested to ensure the Plan can deliver in supporting the tourism industry in its decarbonising mahi.

#### **Responses to selected consultation questions**

| 19 | Low emission business<br>models               | TIA considers that there are multiple opportunities that will<br>emerge from a decarbonised economy and society. In<br>tourism there will be ready transition in some areas, but<br>others are hard to abate. The key will be to create an<br>operating environment where the transition is a benefit<br>rather than a cost. Good metrics, research, technology<br>and structured support will be key to this. We are seeking<br>to drive this type of change through the TSC, but much<br>more could be done through better funded and supported<br>programmes and initiatives.  |
|----|---|---|
| 21 | Monitoring and reporting progress.            | The tourism industry decarbonisation effort is massively<br>inhibited by the lack of quality and trusted data.<br>Stats NZ has a longitudinal tourism series, but this is<br>regarded as weak given that it has derived estimates by<br>sector which will not be sensitive to real tourism progress.<br>TIA calls for a much more acute measurement system of<br>tourism industry carbon emissions.<br>In addition, we are very keen to strengthen the ability and<br>need for businesses to measure and report their own<br>emissions. While this is a key part of the TSC and a<br>priority area for the new Tourism Carbon Challenge, any<br>support or requirement from the overarching policy<br>framework will be very helpful.<br>TIA feels that this is important from a national perspective.<br>Pre-COVID tourism was 21% of exports, 13% of<br>employment and 10% of GDP. This quantum of our<br>society, and its associated emissions, needs to be<br>measured and understood well, for the benefit of all. |
| 22 | New ways to work together                     | As set out above, the Tourism Carbon Challenge establishes<br>a focussed approach to reduce then eliminate industry<br>emissions.<br>It can only advance this mission if it forms part of wider<br>efforts across government, the private sector and<br>communities. Industry simply does not itself control the<br>levers to drive change and aligning effort will be a<br>prerequisite for success.<br>TIA will be working to build the networks and partners to<br>achieve the mission and we would welcome reference in the<br>Emissions Reduction Plan that can enable these linkages<br>within government and its agencies.<br>TIA seeks to operate to assist government in meeting its<br>goals, and to help it get there sooner.  |
| 23 | Government accountability<br>and coordination | In our experience government agencies can be difficult to<br>engage unless the expectations on them are very<br>specifically defined by the Government.<br>This is why it is extremely important that the ERP has<br>specific references to tourism and the particular support it<br>needs to play its part in decarbonising Aotearoa.  |
| 24 | Funding flows                                 | The ERP needs to be 'enabled' appropriately. Government<br>programmes need to be put in place, but equally the right<br>incentives are needed to attract private sector commitment<br>and investment.<br>TIA is very keen, as part of the Tourism Carbon Challenge,<br>to provide the evidence base of the benefits of<br>decarbonising – lower costs, better product, more engaged<br>customers, preferential reputational position, lower risk of<br>having a 'stranded' product, etc.<br>As such, TIA seek support for developing this evidence<br>base and sees a role for government in assisting with this.<br>In some areas, such as the development of sustainable<br>aviation fuels, the requirement might be for a targeted   |

|    |                           | government body to partner with to provide interests in<br>order to achieve the scale needed to make a difference.<br>Overall, funding of many sorts will be needed to elicit the<br>essential private sector commitment to act.  |
|----|---------------------------|---|
| 28 | Emission pricing          | The price of carbon and where it will end up is definitely <u>not</u><br>clear or well understood, and its needs to be.<br>A key part of decarbonising will be to get people looking<br>ahead both for their operations but also their capital<br>investments. A strong understanding of the future carbon<br>price and its contribution to overall costs will be very<br>influential on investment decisions. For instance, if a<br>business is looking to invest in high carbon technology (say<br>a diesel passenger boat) with a 15-year life, the future<br>carbon cost should be factored into this decision. This<br>might shift the decision to a low carbon option that delivers<br>benefits throughout that 15-year period.<br>There should certainly be a very easy to access data series<br>showing the price of carbon over recent years, backed up<br>by a reputable and independent forecast of the future price<br>of carbon.<br>This could be backed up by clear explanation from an<br>economist's perspective about the expected drivers of<br>change over time. |
| 30 | Treatment of forestry     | As part of the Tourism Carbon Challenge, TIA is keen to<br>understand the carbon offsetting system better than we do.<br>It must be genuine, respected and credible. We have work<br>to do to but we are not convinced that fast-cycle plantation<br>forest meets the standards we would expect.<br>As such, we strongly favour permanent native forest carbon<br>sinks, and we believe greater effort should be placed on<br>advancing these at scale.<br>Our sense is that current incentives are leading to<br>unintended consequences, and this is a matter to address<br>in the ERP.   |
| 36 | Big technology challenges | The critical emissions question in the tourism industry lies<br>with its aviation component.<br>This is a 'hard to abate' sector for many reasons – long<br>technology deployment cycles (decades for large<br>technology shifts), the critical emphasis on safety, the vast<br>investment and commercial risks involved.<br>No airline can take these matters on alone, and the global<br>aircraft and engine manufactures can only do so much.<br>And yet, technology change is the only way to markedly<br>change the current emissions footprint of aviation.<br>With much of this work outside of Aotearoa, the focus must<br>be on what we can do; for instance, to trial new<br>technologies for electric short-haul aircraft, etc.<br>Another fertile area will be in developing sustainable<br>aviation fuels at scale, and there are interests in advancing<br>this in New Zealand.<br>TIA considers this would be a very good 'mission-based'<br>project to take on.   |
| 37 | Science system            | The science system must be oriented towards supporting<br>key parts of the economy by providing the knowledge and<br>information that is needed.<br>In TIA's perspective, addressing the information needed is<br>important and some existing barriers must be removed.<br>This includes the current investment criteria for many<br>science funds that seems more about the cutting-edge<br>research methodology as opposed to the impact of the<br>research. The specific research needs must be identified   |

|    |                              | and acted upon, and hard to abate areas should be<br>prioritised.<br>Having strong fundamental research in place is crucial to<br>provide the foundation work that can then be picked up by<br>industry.<br>Additionally, there needs to be capacity for smaller scale<br>innovation and problem-solving approaches that enable<br>engagement with grass-root operators in the industry.<br>Innovation labs and accelerator programmes work well in<br>tourism to address specific questions.<br>Overall, the current science system does not serve the<br>tourism industry well, and this is a key area of necessary<br>change.   |
|----|------------------------------|--|
| 40 | Opportunities for innovation | The aviation sector stands out as needing specific support<br>for long term innovation.<br>Some parts of the land transport fleet in tourism have<br>specific needs to decarbonise, such as the electrification of<br>campervan fleets.<br>Hotels and other sorts of accommodation have significant<br>opportunities to innovate to reduce emissions.  |
| 42 | Encourage to take actions    | In TIA's Tourism Carbon Challenge, a key theme is 'people'.<br>At other times we might have called this 'industry', but we<br>recognise that it is the commitment of individual people<br>that will be the key factor.<br>We need to inform, inspire and positively incentivise the<br>actions we are seeking. There are no short-cuts with this.<br>The ERP has to find ways to do this, and TIA will be very<br>pleased to play its role in assisting, particularly to link the<br>ERP initiatives with people across the tourism industry.  |
| 45 | Circular economy             | The TSC supports the circularity of supply-chains and, it<br>logically follows, for energy production, such as for<br>sustainable aviation fuels.<br>SAFs would certainly be the priority area for the tourism<br>industry, ideally with scale to make a real difference.  |
| 53 | Transport targets            | TIA supports the target of 30% of the light vehicle fleet<br>being zero-emissions by 2035. We feel that the tourism<br>industry, with its relatively fast fleet turnover and its desire<br>to innovate, will be at the forefront to the electrification of<br>its light vehicles.  |
| 56 | Time limit on light vehicles | Blanket prohibitions can cause problems. We support the direction of travel but can also see that there may well be a range of specialised requirements that will need to be taken into account.   |
| 57 | Other views on transport     | <ul> <li>TIA considers that a separate aviation treatment (such as being a new Focus area) is warranted given the specific nature of the issues, and its particular solution pathways. We support the three initial actions in the first budget period to: <ul> <li>Work with industry of sustainable aviation fuels.</li> <li>To support a public-private partnership, including an advisory body, on decarbonising aviation.</li> <li>Support development of zero-emission aircraft. Critical to these areas will be linkages with other parts of the Plan, particularly around the development of Sustainable Aviation Fuels at the scale needed, and support for the R&amp;D that will be essential in enabling substantive reductions in aviation emissions.</li> </ul> </li> </ul> |

| 58  | Energy system                    | Ensuring we have sufficient low emissions electricity<br>production will be key, with the necessary distribution<br>network, to support a low emissions land transport fleet.<br>With tourists going to many far-flung places, we need to<br>ensure there is a corresponding network and reliable<br>electricity flow to ensure safe visitor movements to those<br>places.   |
|-----|----------------------------------|--|
| 64  | Addressing data gaps             | The data flows that sit behind all initiatives must be in place and then made available.<br>TIA considers this a key area that will require greater profile and support within the ERP.  |
| 68  | Support for low-emissions fuels  | Sustainable aviation fuels are the only option available at<br>present to reduce emissions for long haul travel.<br>Given the cost structures involved in setting up a<br>programme and attaining scale, government support for<br>initiatives will be critical, as identified elsewhere in the<br>document.<br>This point should be expressed more directly.  |
| 82  | Building and construction sector | Given the long life of most build structures, it is important<br>that incentives are in place to get the best design and<br>technology in new builds as quickly as possible. Certainly,<br>new build hotels should all be using the best options<br>available.<br>Finding ways to retro-fit these technologies will also be<br>important.  |
| 89  | Waste sector                     | TIA strongly supports improvements to New Zealand's waste system.<br>In working with businesses applying the TSC, it is clear that it is the extent and quality of the local waste handling facilities that governs what individual businesses can do.<br>TIA considers some form of national initiative is needed to ensure the regional and local solutions are put in place.  |
| 108 | Native forest carbon sinks       | TIA strongly supports large scale native forest carbon sinks<br>that can also generate a wide range of associated benefits,<br>including biodiversity, amenity value, recreation, and<br>commercial business opportunities, among others.<br>The tourism industry has discussed ideas like purchasing<br>large blocks of land and establishing 'Tourism Carbon<br>Forests'.<br>These would be branded as sinks and visitors could see<br>where their emission off-sets are going.<br>This would be a strong value-add for visitors (e.g. to<br>ethically justify their long-haul flight) and for the industry<br>that would have great stories to tell about forests and<br>wider gains.<br>TIA would be very keen to explore developing such an<br>initiative that could restore what might be low value<br>conservation or stewardship land.<br>We are very keen to pursue this. |



24 November 2021

Vicky Robertson Secretary for the Environment Ministry for the Environment PO Box 10362 Wellington 6143

Dear Vicky

#### Submission on the Emissions Reduction Plan

I am pleased to submit Toyota New Zealand's views on the Emissions Reduction Plan (ERP).

We have previously submitted on the Climate Change Commission's draft advice to the Government on the first emissions reduction budget. We also made submissions on the Ministry of Transport's Green Paper, Hīkina te Kohupara. We acknowledge that a number of the issues we have raised on these earlier proposals appear to have been taken into account in developing the ERP.

This submission is limited to matters associated with the proposals for transport.

#### **Summary Of Our Position**

We recognise that shifting to a lower emissions economy requires a change in our transport system. New Zealand cannot reduce its overall level of emissions, and deliver on its international commitments, without addressing emissions from transport.

The pathway adopted for New Zealand must be sensible and achievable, reflecting our market conditions and the mobility needs of Kiwi families and businesses. It must also ensure that lives will not be endangered through encouraging vehicles to enter the fleet with lower safety standards. The Pathway for New Zealand must include all technologies, MaaS and car sharing solutions to ensure a successful transition.

We broadly agree with the three areas of focus to reduce emissions from the transport system. We also think the four targets proposed to 2035, while challenging, are a sensible approach to transitioning the transport system.

We think the first two targets, relating to the light vehicle fleet, provide a more balanced and nuanced approach than setting a date for banning the importation of vehicles powered by internal combustion engines (ICEs), or focussing too heavily on battery electric powered vehicles (BEVs). We welcome this approach.

We also think that the first focus area – reducing reliance on cars and supporting people to walk, cycle and use public transport – is too narrowly framed, and that more emphasis should be given to innovative approaches to reduce vehicle kilometres travelled (VKT). This will be





especially important in the first budget period (2022-25) of the ERP to support the behaviour change needed to achieve the proposed target.

This submission further outlines our thinking on these matters.

#### We Are Committed To Reducing Emissions

At Toyota we are committed to reducing emissions from our vehicles now and steadily over the medium to long-term while keeping mobility safe and affordable for our customers.

As one of New Zealand's most trusted companies, we take very seriously our role in the community, and our responsibility to provide leadership in the transport system's response to climate change. This is based not just on Toyota's global view but also the fact that we supply vehicles and mobility options to the widest range of kiwis with incredibly diverse mobility needs.

Our international principal (Toyota Motor Corporation) has been the leading supplier of hybrid electric vehicles (HEV) globally for over two decades and is committed to leading the way to the future of mobility.

We consequently believe Toyota can, and must, provide strong and sound leadership in New Zealand's response to climate change.

Our primary concern is to ensure the pathway is sensible and achievable. In making all our submissions on the proposed pathway for the light vehicle fleet we have been guided by three key considerations:

1. The pathway must reflect New Zealand market conditions that affect the availability of new vehicles.

New Zealand's new and used vehicle market is a tiny proportion of the world's demand for vehicles. We face intense competition for the latest low emissions technology from far larger, richer, and more powerful markets. Further, our national propensity to allow used imports to enter the fleet has given us limited bargaining power for the latest technology. We consequently have quite long lead times before new models will be available to us.

2. The pathway must not adversely impact on the affordability of new vehicles.

Affordability and consumer acceptance is crucial to an effective transition. BEVs are currently more expensive than comparable vehicles with other powertrains. Kiwi families and businesses may be forced to keep their older, high emissions for longer, especially if affordable alternatives are not available. This will slow the transition of the fleet.



3. The pathway must not compromise safety and put kiwi lives at risk.

Efforts to overcome supply and affordability constraints cannot be at the cost of lives by allowing less safe, and older BEVs to enter our fleet. This concern was heightened by the Clean Car Discount allowing a rebate for 3-star safety rated vehicles. The impact of this will be felt most heavily by some of our most vulnerable in society – families on low incomes who can only afford cheap, less safe, older vehicles.

We think the pathway for reducing emissions from the light vehicle fleet will be most effective if it is designed to incentivise continual reductions in emissions. Toyota New Zealand is focused on introducing new, cleaner, and safer vehicles into the market at a competitive price that is affordable for kiwis. We are reducing emissions from vehicles we supply as soon as possible and over time with many mobility options. This philosophy focuses on what we describe as the *'next newest vehicle'*.

A consumer journey over the next two decades could therefore look like – a fuel efficient petrol or diesel, followed by a HEV, plug in hybrid, and later a zero-emission BEV or, in the more distant future, hydrogen fuel-cell. By following this way of thinking we ensure that cleaner and safer vehicles are as affordable as soon possible for kiwis and their families. Our step-by-step process focusses on promoting a more progressive and workable transition of the light vehicle fleet.

## **Response to Consultation Questions**

# Consultation Question 52 – Reducing VKT by 20 percent by 2035

Toyota New Zealand recommends that:

- Focus area 1 be expressed as "Reducing reliance on cars by increasing average vehicle occupancy and supporting people to walk, cycle and use public transport".
- Budget period 1 include a commitment to review policy settings and incentives to encourage greater use of shared mobility solutions, especially where public transport is not available, and where active modes are not feasible.

We support in principle the use of a target to reduce VKT. Achieving a reduction by 20 percent is ambitious and would require a very significant shift in citizen behaviour and mobility choices. In this regard, we believe the focus area that this target supports should be more widely framed.

Focus area 1 currently emphasises an approach to reduce reliance on cars by supporting people to walk, cycle and use public transport. These things are necessary, but not sufficient. Many daily journeys, even in our largest cities, will never be undertaken by public transport, or by active modes. A significant reduction in VKT will also require increased average vehicle occupancy of private vehicles.

The ERP currently reflects very little emphasis being given to encourage shared mobility solutions. We think this is a significant omission from the suite of interventions that will be



needed, particularly in the first budget period if we are to shift patterns of consumer behaviour in time to achieve the proposed 2035 target.

The benefits of increasing average vehicle occupancy are hopefully self-evident. The OECD 2017 study of shared mobility in Auckland (<u>https://www.itf-oecd.org/sites/default/files/docs/shared-mobility-simulations-auckland.pdf</u>) provides some useful quantification of the potential scale of the benefits that could be derived. They concluded that:

"If all of today's private car trips were instead provided by shared mobility services, the total distance driven by all vehicles would halve, as would emissions and congestion. Even if only a subset of car users switch to shared mobility services, this can deliver reductions in total kilometres driven and CO2 emissions of around 15%. CO2 emissions could be significantly further reduced if the fleet is comprised of electric vehicles."

Toyota New Zealand strongly believes in the impact that car sharing and MaaS solutions will have in reducing VKTs in New Zealand. In partnership with Toyota Financial Services, we have purchased the largest mobility company in New Zealand CityHop. We are also funding a hydrogen vehicle car sharing programme for NZ companies in an attempt to not only test new technology but invite these companies to trial a car share fleet.

We consequently think the ERP should include consideration of a suite of policies, including direct incentives, designed to increase average vehicle occupancy, especially where public transport options are not available.

We think this shift in policy could achieve a much more significant reduction in VKT than would otherwise be possible. This might also provide a mobility solution for some of our most vulnerable Kiwis who typically own older, less efficient, and safe vehicles, and who live and work in locations where public transport solutions, walking, or cycling will not meet their needs.

# Consultation Questions 53 and 56 – setting a target for zero-emissions vehicles and a time limit on importing ICEs.

Toyota New Zealand recommends that:

- Setting a target percentage for the light fleet to be zero-emissions vehicles by 2035 be adopted. A target of 30 percent, while challenging, is preferable to a date for banning further importation of ICEs.
- The Government set a target percentage of new vehicles entering the fleet that will be used to trigger a decision to set a date for banning ICEs. The Government should work closely with the motor industry to ensure this target is achieved as soon as is practicable.

We support in principle the use of a target for the percentage of vehicles in the fleet to be zero emissions by 2035. The pursuit of such a target will need to balance the three factors mentioned earlier – availability, affordability and safety.



Achieving 30 percent by 2035 will, however, be challenging. Based on the current fleet size, this would require around 1.1 million vehicles to be zero emissions by 2035. With currently only around 0.008 percent of the fleet being BEVs, the scale of the change required cannot be underestimated. We welcome, however, the intent in the ERP to partner with industry on managing these issues.

We do not support the approach recommended by the Climate Change Commission to set a date as early as 2030 to ban on further ICEs entering the fleet. We know that several jurisdictions have already mandated a specific date. We think this approach will likely prove to be problematic for the Government.

The difficultly in mandating a specified date at this time will be knowing whether it is both feasible and realistic. The current level of uncertainty may result in a specified date becoming controversial. Consumers may not be prepared to accept the ban. So, we think some care is needed in designing an appropriate response to this national challenge.

We think the policy approach should be to explicitly agree the percentage of the new vehicles entering the fleet that must be zero emissions before a decision will be made to prohibit further importation of ICEs. The Government's focus should initially be to work with industry and consumers to drive the uptake of zero emissions vehicles, and achieve the specified threshold as soon as is practicable.

#### **Concluding Comment**

We are in broad agreement with the ERP, specifically as this relates to the proposed transport areas of focus, targets, and initiatives. These largely align with the submissions we have previously made on these matters. We believe, however, that the ERP will be further strengthened if the recommendations we have made in this submission are adopted.

If Toyota is going to contribute most effectively to NZ's climate challenge, we need a stable, predictable policy environment to help us on the way and the targets set out need to be sustainable and achievable. Toyota New Zealand is committed to working in partnership with the Government in the huge task of reducing emissions from the nation's light vehicle fleet. We want to work with the Government to ensure New Zealand is successful in this critical mission.

Your sincerely



Neeraj Lala Chief Executive Officer

# **Submission**

# to

# the Ministry for the Environment

on the

# **Emissions Reduction Plan**

24 November 2021

Prepared by members of the Urban Land Markets Group

Group members are providing advice for the public good and are not necessarily reflecting the views of their respective organisations. The advice is a collaborative effort, so individuals do not necessarily endorse every element in the advice.

#### INTRODUCTION AND SUMMARY

- 0.1 This submission on the Ministry for the Environment's *Emissions Reduction Plan* [the Plan] is made by members of the Urban Land Markets Group, an informal working group established by Associate Minister Twyford and authorised by Minister Parker to provide an independent stream of policy advice on housing and competitive urban land markets.
- 0.2 The Group aims to ensure policy and regulatory settings are consistent with achieving housing affordability. It has produced two working papers providing advice on competitive urban land markets and on complementary measures in infrastructure funding and financing to enable more housing development.
- 0.3 Members of the Group are concerned about unintended consequences of the Plan for housing supply and for housing affordability. When considering matters of urban form, urban design, and building standards, aspects of the Plan risk working at cross purposes to the government's urban growth agenda while potentially achieving little reduction in net national emissions.
- 0.4 The Group acknowledges circumstances whereby coordinated regulatory and investment initiatives can reduce net emissions by more than would be possible solely through the ETS.
- 0.5 Market failures may hinder appropriate responses to rising carbon prices, making adjustment unduly costly. Policies remedying those failures can make the ETS more effective, reducing the overall cost of reaching net zero. Such measures should be supported by appropriate cost-effectiveness evaluation.
- 0.6 If political constraints mean the ETS cap can only be reduced to the level the electorate can bear, rather than the level consistent with a durable path to net zero, additional policies that ease the political constraint and enable greater emission reductions may be warranted. This can be welfare enhancing if the initiatives are cost-effective relative to the best-available alternative options. However, demonstrating cost-effectiveness requires knowing what the optimum price would be if the government set the optimal cap and this is unknown, and there is no process to discover it. This means in practice relatively prescriptive guidance is required for cost-effectiveness assessments.
- 0.7 Several central government initiatives are already underway that have consequential effects on urban emissions. These include:
  - (i) The RMA 1991's National Policy Statement on Urban Development;
  - (ii) the Enabling Housing Supply Bill currently before Parliament;
  - (iii) the Government Policy Statement on Housing and Urban Development;
  - (iv) the Government Policy Statement on Land Transport;
  - (v) plans for congestion charging and transport charging more generally; and,
  - (vi) the declining cap on net emissions provided by the Emissions Trading Scheme, which covers all consequential urban greenhouse gas emissions.
- 0.8 Unless they address other demonstrable market failures or ease local regulatory constraints against adopting lower carbon options, it is unlikely individual local government urban planning initiatives can have substantial cost-effective effects on net national emissions, when the existing suite of policy initiatives already in progress is considered. However, coordinated action across all councils, perhaps through the Plan may reduce national emissions, if political constraints have prevented further reductions in the ETS cap. But the issue is determining the
cost effectiveness of such collective initiatives. Other options may more effectively address the political constraints.

- 0.9 In our view, councils have used their zoning and consenting powers to protect their balance sheets against the costs that they believe is consequent to urban growth. Those incentives led to zoning and consenting decisions that have stymied urban intensification and housing development.
- 0.10 The government's housing supply agenda has worked to prevent councils from using zoning and consenting to stymie housing development. These measures will enable more intensive urban form by making it harder for council to use zoning and consenting to block new housing development.
- 0.11 Measures recommended by the Plan would provide councils with new tools capable of frustrating development and could undermine the government's objectives in housing supply.
- 0.12 Further, there are trade-offs between policy responses for emissions reductions compared to responses for climate adaptation. For instance, more dense and centralised urban form may reduce emissions from utility networks, but may increase exposure to risk by 'placing more eggs in one basket' when major storm events occur that cause network outages.
- 0.13 We urge the Ministry to consider very carefully the place of urban planning in the Emissions Reduction Plan. Measures already underway will work to reduce urban emissions and will have substantial effects on urban form. Asking councils to consider emission reductions explicitly in planning and consenting, over and above the consideration already given to those emissions in measures already underway, with insufficient guidance puts the housing supply agenda at risk for little potential greenhouse gas abatement.

### 1. Urban emissions and the current policy environment

- 1.1 When councils believe they face substantial costs in accommodating urban growth, they use zoning and consenting powers to protect their balance sheets. Over decades, these restrictions have had substantial effects on urban form, housing supply, and housing affordability. They prevent intensive development in places where infrastructure costs may be higher, while also restricting development at city fringes.
- 1.2 We have inherited urban transport infrastructure set in an environment where congestion was not priced and carbon emissions neither priced nor considered. This created a bias toward higher-emitting urban forms than is desirable to help today's climate change objectives.
- 1.3 The policy environment has substantially changed for the better. Past patterns of urban development will provide a poor predictor of future urban form.
- 1.4 Since 2020, the Emissions Trading Scheme has had a binding cap on net emissions, with a sinking-lid policy soon set to take effect. The ETS provides a price on carbon, making emissions more costly. All substantial urban emissions are covered by the ETS. Rising ETS prices, and expectations of rising ETS prices, will affect decisions made by households, firms, and councils, where they are allowed to do so.
- 1.5 Where council zoning and consenting practices have imposed undue restrictions on urban intensification, the Government's housing supply agenda works to enable more intensive urban forms. For example:
- 1.5.1 The National Policy Statement on Urban Development enables substantial increases in density in places near transit nodes. More people will live in places well-served by lower-emission options. This will have effects on urban emissions. It also requires the

removal of minimum parking requirements from urban environments, which will indirectly enable higher density and support lower transport emissions.

- 1.5.2 The Enabling Housing Supply Bill, currently under consideration by Parliament, will require councils to allow far more housing. Development of up to three houses of up to three stories each will be allowed in most places in Tier 1 urban centres. While the Bill provides for a relatively modest increase in density, the large size of the area affected means the Enabling Housing Supply Bill has the potential to significantly increase housing supply. The effect of the change should be largest on underdeveloped lots in locations where people wish to live. This Bill enables more intensive urban forms, while leveraging existing polycentric city modes. Councils will wish to enable greater public transit options between those urban centres.
- 1.5.3 Other central government initiatives, including the Government Policy Statement on Housing and Urban Development, and the Government Policy Statement on Land Transport, also work to reduce urban greenhouse gas emissions. The GPS-HUD aims to make lower-carbon housing options simpler, while the GPS on Land Transport 2021 aims to support a rapid transition to lower carbon transport systems.
- 1.5.4 Plans for congestion charging and transport charging more generally will also substantially affect urban form over the longer term by internalising costs. Public transit options and housing closer to amenities and closer to employment will become relatively more attractive as a consequence. Councils working to meet resident demand for services will seek to accommodate that increase in demand for public transit. And central government initiatives already described will enable a more flexible housing supply response to those changes in demand.
- 1.6 Additional transport and land use policy measures could be undertaken that would enable councils to respond more quickly to the changed policy environment, improve urban form, and make it easier for households and businesses to have a lower carbon footprint. We addressed some of these issues in the Group's first paper on urban land markets.
- 1.6.1 Flexible zoning options make it easier for households and businesses to make locational choices that best respond to rising carbon prices and to congestion charges. Current policy can make it challenging for people to relocate closer to work or education, though the NPS-UD and the Enabling Housing Supply legislation will ease that constraint. Flexible mixed-use zoning options could further assist.
- 1.6.2 Policy could also support the establishment of transport corridors that enable the efficient provision of public transport and active mode options. Transport corridor designations then further the government's housing supply agenda while enabling lower carbon footprints.
- 1.7 The Group's first paper also warned that achieving better urban form outcomes does not require a restriction on the location of development. It noted that a well-designed mixed-use transit-oriented development 3km outside the existing urban edge will generate fewer car trips than a poorly-designed infill development 3km inside the urban edge. Further, the first paper noted that enabling development at a city's fringes anchors land prices throughout the urban area, making housing more affordable everywhere including in the city centre.
- 1.8 The Group's first paper urged that urban policies be aimed at making it easier to choose home locations, work locations, and travel behaviours that require less vehicle travel and vehicle emissions, which would in turn reduce the cost of abating emissions within the ETS. This requires zoning flexible enough to accommodate changes in complex locational preferences.

- 1.9 Moving beyond those measures to explicitly target carbon emissions in urban planning, over and above measures already underway, brings considerable risks. While it is always possible that careful urban planning will address market failures not already covered by the ETS or already addressed by other central government initiatives, it is also possible that planning options encouraged by the Plan will be used for other purposes.
- 1.10 A broad remit to consider emissions reduction in urban planning risks providing councils with new tools to obstruct new housing development. Councils could justify restrictive planning and consenting practices on carbon-mitigation grounds, notwithstanding a lack of compelling evidence for such restrictions. Where the incentives facing councils still lead them to oppose urban growth, providing new tools to stymie housing development has risks. This therefore means that tight guidance and direction is needed for any initiatives that aim to do more than simply respond to existing and expected ETS prices.

### 2 New tools for protecting the council balance sheet

- 2.1 In our view, councils have historically used restrictive zoning and consenting measures to protect their balance sheets against the perceived costs of urban growth. The Government's urban growth agenda prevents councils using some tools in overly restrictive ways. For example, the NPS-UD requires that more intensive land uses be allowed near transport nodes, and the Enabling Housing Supply legislation would allow slightly more intensive land use more generally.
- 2.2 Where the incentives facing councils to restrict growth have not yet been substantially affected, providing new tools that enable restrictions on urban development, even if they are nominally intended to reduce urban greenhouse gas emissions, could threaten the government's housing supply agenda.
- 2.3 The Plan suggests measures including reduced fossil gas use in buildings, capping the emissions from buildings, investigating and potentially implementing a range of actions to lower emissions from buildings, reducing construction waste, reducing organic waste to landfill, implementing mode-shift transport plans, reducing vehicle-kilometres travelled and more.
- 2.4 The Plan also suggests that "rapid outward growth has led to poorly functioning urban form and higher emissions", and that strategic planning emphasising medium- and high-density development can mitigate emissions. The group notes that outward growth has not been "rapid". Built-up areas (settlements) increased from about 167,000 hectares in 1996 to 196,000 in 2018, which is only 0.73% per annum compound growth, relative to population growth rate of about 1.5% per annum.
- 2.5 Many of the Plan's measures could be warranted in particular circumstances. But they risk being used by councils to restrict development in places where councils are otherwise constrained against blocking new housing development by the NPS-UD and by the Enabling Housing Supply legislation.
- 2.5.1 We have already seen objections to the Enabling Housing Supply legislation based on potential construction waste.
- 2.5.2 Councils could use tight building emission standards not to reduce net emissions, but to increase the costs of development in places where council wishes to restrict development.
- 2.5.3 Good transport planning can reduce vehicle-kilometres travelled. While it is true that dense cities have lower per-person carbon footprints, suburban development when

planned properly with access to appropriate transport corridors – can also involve relatively low carbon footprints. But reducing vehicle-kilometres travelled could also be used as blanket justification for preventing development at city fringes, or indeed in many locations, driving up the costs of land and undermining housing affordability.

- 2.5.4 Councils could use the Plan to justify more substantial restrictions on suburban development, which would hinder the government's overall supply agenda not just in preventing some homes from being built at the city fringes, but more substantially in affecting urban land prices across an entire urban area.
- 2.5.4.1 If paddocks at the city's fringes can become subdivisions with land costs only higher than bare-paddock cost because of the associated infrastructure, land prices elsewhere in the city are anchored by competition from those fringes. REINZ data on rural land prices suggests that farm prices (arable, dairy, livestock) have stayed around \$20k to \$40k per hectare (ie, \$2 to \$4 per m<sup>2</sup>) the last 15 years, despite interest rate reductions since the GFC. Even if few choose to live at the edges of town, that potential competition helps ensure affordability across the entire city.
- 2.6 We consequently urge caution in measures allowing or requiring councils to target greenhouse gas emissions directly, over and above measures already encouraged or required by existing policy initiatives.
- 2.7 We also urge that use of such measures be accompanied by rigorous assessment of their relative cost-effectiveness. It is eminently possible that some council measures targeting urban greenhouse gas emissions will make it easier for New Zealand to reach Net Zero. But where there is risk that councils use those measures to achieve other ends, cost-effectiveness assessment can help ensure that measures are used appropriately.
- 2.8 If collective public action were to seek to reduce aggregate demand for emissions in order to reduce the government cap, then a cost effectiveness assessment needs to demonstrate the costs of doing so are less than simply reducing the cap and having higher emissions prices. Alternative options, like a carbon dividend, could be assessed and considered. A centre of expertise should prescribe what higher emissions price should be used in such assessments to help prevent non-ETS driven policy responses causing more harm than good. International carbon prices may provide some guidance.
- 2.9 Councils will require guidance and support in setting these assessments; carbon accounting and forecasting is not within the core competences of local councils. Central government can assist. This would also provide oversight ensuring that tools are used appropriately. Such assessment should demonstrate that measures taken will reduce net national emissions, after taking into account other policy measures already in place, including the effects of the Emissions Trading Scheme.



OFFICE OF THE VICE-CHANCELLOR TE WÄHANGA PÜTAIAO VICTORIA UNIVERSITY OF WELLINGTON, PO Box 600, Wellington 6140, New Zealand Web wgtn.ac.nz

24 November 2021

VICTORIA UNIVERSITY OF

WELLINGTON

E HERENGA WAKA

Emissions reduction plan consultation Ministry for the Environment PO Box 10362 WELLINGTON 6143

# Te Herenga Waka—Victoria University of Wellington Emission Reduction Plan Submission

Thank you for the opportunity to contribute to the development of the Emissions Reduction Plan. It is pleasing that this Government is demonstrating an increased commitment to climate action. We are in the middle of a climate crisis and creating lasting change across society and the economy is needed to address this crisis in a fair, equitable and sustainable way.

Te Herenga Waka—Victoria University of Wellington is a values-based university with academic expertise in climate science and climate solutions and a commitment to take strong climate action. Our own goal to become net zero carbon by 2030 and the 40 percent reduction in emissions since 2017 demonstrates our commitment to sustainability.

The University values academic freedom, and many of our researchers and academics will have shared their opinions and expertise through their own individual submissions. This submission provides an institution-wide perspective and is based on our experiences and challenges in leading climate action as an organisation of 2,300 staff and 22,500 students. Rather than responding to all of the questions in the consultation document, this submission will only focus on the areas most relevant to Te Herenga Waka.

The draft Emissions Reduction Plan follows on from the excellent work of the Climate Change Commission (the Commission). We are pleased that two of our academic staff – Professor James Renwick and Dr Judy Lawrence were appointed as Commissioners and were able to help deliver thorough, evidence-based and achievable advice to the government on a proposed pathway to deliver the necessary climate action. Given the strength of the Climate Change Commission work and the extensive engagement with the New Zealand public in developing it, this draft Emissions Reduction Plan could have further expanded and utilised the feedback gathered by the Commission rather than undertaking another round of consultation.

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It is concerning that there is limited detail on proposed policy settings in the document and what information is provided, suggests a rather conservative policy direction, leaving a very large gap between our emissions budgets and the anticipated emissions reductions. While we agree that central government policy cannot be the sole mechanism for achieving our carbon budgets, it is risky to leave too much to the private sector and the wider public. Even the high policy impact forecast leaves an emissions reduction shortfall of 27%, which is still too high given what is at stake – providing a habitable planet for our future generations.

We do acknowledge that the short time frame and the complexity of coordinating policy across multiple government agencies must be extremely challenging, however, the rapid allof-government response to the COVID-19 pandemic has shown that it is possible.

# **Equitable Transition**

The commitment to an equitable transition is very important. Education will be critical to retrain, upskill or build the capacity of the workforce as employment opportunities change. At Te Herenga Waka we are already producing graduates, across multiple disciplines, with the skills and knowledge that is needed for the transition. We are eager to do more, in partnership with the government, to support industries and communities facing changing employment opportunities and needs.

The need for an equitable transition is also immediately relevant to our student body who are facing increasing financial pressures. The policy setting for our climate-friendly future must generate student rental accommodation that is low carbon and healthier without being unaffordable or unattainable. Transport costs are also a major challenge for students. Free or heavily subsidised public transport for students would generate increased use of low carbon transport (and create a habit that would continue into their working life), while also removing a financial barrier preventing access to study for many students.

# **Behaviour Change**

The consultation document only included a limited section on behaviour change, but it should be given greater priority. If individuals engage with climate action on a personal level, they are more likely to make a meaningful contribution in their professional capacity or as members of their community. Our experience has shown us that it requires more than just education and awareness to generate behaviour change. We have found people more likely to adopt climate-friendly behaviours when there is other change happening in their life, such as pandemic restrictions or moving to a new city. University students are at a time in their life when they are open to change and adopting new behaviours. We would welcome working with government on an individual climate action campaign for students.

# Research, Science and Innovation (RSI)

We welcome the policy direction to increase national investment in RSI. We encourage the Government to think not just about the technological solutions we require, but also about the innovations that could come from other disciplines as well, such as humanities, business processes, legal frameworks etc. Furthermore, to grow RSI in Aotearoa we need to build the capacity of the community. A government incentive programme to encourage private sector investment in post-graduate researchers could help both build capacity and diversify RSI investment sources. The geographic spread of our research community also limits the potential impact. Concentrating our innovative thinkers together into hubs will help build critical mass for more impact. The potential for closer collaboration between universities and CRIs would help in this regard.

# **Emissions Pricing**

Te Herenga Waka is a large organisation, but not currently a participant in the Emissions Trading Scheme. Any changes to emissions pricing will simply result in an expected increase in the price of the goods and services we purchase. To date, the ETS cost component of the goods and services we buy has been negligible to our overall expenditure, and the price rises have not been sufficient to trigger any material change in our purchasing decisions or consumption patterns. Price fluctuations due to other factors in the electricity and gas markets have been much greater than emissions pricing.

Where emissions pricing does have more influence on our decision making is in our strategy for voluntary offsetting. The uncertainty of how high the carbon price will go and how fast it will rise has led us to adopt a plan for insetting, rather than offsetting, to grow our forest and generate our own carbon credits to cancel against our operational emissions. That's a good outcome for Aotearoa, but the price uncertainty around carbon makes developing a business case for voluntary offsetting or insetting very challenging.

## Our contribution, by sector:

## Transport

Understandably, the policy settings in the consultation document are the most developed for the transport sector. For over a decade we have been working hard to increase the use of sustainable commuting modes to and from campus. In our latest surveys only 9 percent of students and 23 percent of staff drive private vehicles to campus. Creating this positive mode shift has required close collaboration with local government to improve public transport provision and we would welcome further central government support to make public transport more frequent and cheaper for users.

Another critical factor has been the establishment of more University-managed student accommodation within walking distance of the campus. Beyond the accommodation we provide, the rental property market for students is very challenging in Wellington – it is scarce and expensive. Any government policy around low carbon transport must work hand-in-hand with urban planning to ensure the transport infrastructure supports housing intensification to minimise transport demand.

The consultation document includes very little mention of the rise of working from home that has developed during the COVID-19 pandemic. We have seen a significant increase in staff and students working or studying from home for at least part of the week, which has contributed to a reduction in our overall carbon emissions (even when factoring in the emissions of working from home). While remote working is not applicable to all industries, it warrants consideration for the Emissions Reduction Plan.

The consultation document also has very little mention of aviation emissions. While international aviation falls outside the scope of the Emissions Reduction Plan, it was our largest source of carbon emissions before the pandemic caused borders to shut. We are working to ensure that when borders open again our volume of air travel returns to a much lower level than 2019, by continuing the use of digital collaboration tools adopted during the pandemic. So, while it is important to pursue alternative fuel technologies (including the work of our Robinson Research Institute on electric aviation), the Emission Reduction Plan should also include support for alternatives to air travel.

# Energy

The opportunity to have a 100 percent (or as close as possible to it) renewable electricity sector provides a great leadership position for Aotearoa. We want to see that transition happen as quickly as possible and are currently working on a project to install a 165-kW solar-PV array on the roof of our Te Aro campus.

The bigger challenge for Aotearoa is managing the transition from fossil fuels to electricity. Most of the University campus is heated using natural gas fired boilers, which we are planning to phase out for heat pump alternatives over time. However, we face the same challenges as much of New Zealand – there is still a very high capital cost to replace the existing infrastructure (even after funding support from the state decarbonisation fund), compared to a new gas boiler system. And it places a large amount of additional load on an already strained electricity network. To manage this, improved energy efficiency (we have already improved energy efficiency by 35 percent across the campus) and peak demand management to avoid spikes in load in the network is key. Any additional government incentives or support to help accelerate that transition would be welcomed.

# Buildings

As mentioned above, Te Herenga Waka has made significant improvement in the energy efficiency of our buildings and there is considerable opportunity for more highly cost-effective carbon savings in the buildings and homes throughout Aotearoa. Government policy has an important role to play in addressing the split incentive between property owners and tenants and upskilling / incentivising the property sector to prioritise energy efficiency.

In addition to the operation of our buildings, we are also factoring in carbon emissions of the building materials. Our next significant campus development project – the Living  $P\bar{a}$  – will meet the Living Building Challenge requirements and make heavy use of structural timber, so that the building stores more carbon than it produces during construction and use of its lifetime. Government policy that influences the choice of construction materials through the design process could help generate more low carbon building like the Living  $P\bar{a}$  around the country.

# Waste

Waste to landfill forms a very small part of our emissions profile. Our main priority is working with our suppliers and tenants to reduce the waste we generate and to divert organic waste into compost and on-campus worm farms.

# Forestry

Carbon sequestration through forestry is critical in order to meet Aotearoa's carbon goals in the short-term and to provide more time for more significant emissions reduction in the future. At Te Herenga Waka we are also applying this principle. Rather than buying local forestry carbon offsets, where there is a high degree of price uncertainty and forecast price escalation, we are planning on growing our own forest(s). Rather than simply viewing the forest as a carbon offset, we will be able to get additional value from it through applied teaching and research opportunities, growing partnerships with our community and enhancing the biodiversity of the local eco-system. We have already formed a partnership with Wellington City Council for reforestation of the Outer Green Belt and are eager to do more. The Billion Trees Fund kick started a lot of reforestation work, and while that funding has expired we would like to see more support provided. Any government funding could be targetted to ensure the right trees are planted in the right locations, with active forest and pest management to ensure employment opportunities are increased, the right mix of exotic and indigineous is achieved and valuable pastoral land is preserved.

Thank you again for the opportunity to provide feedback. We are committed to being a leader for climate action and look forward to working the government for a low carbon future.

Yours sincerely



Grant Guilford Vice-Chancellor and Chief Executive File No: Document No: Enquiries to: 22 12 05 21969543

26 November 2021

Ministry for the Environment PO Box 10362 Wellington 6143

Email: climateconsultation2021@mfe.govt.nz

Tēnā koe,

Waikato Regional Council Submission to the Emissions Reduction Plan Discussion Document

Thank you for the opportunity to submit on the Emissions Reduction Plan Discussion Document. Please find attached the Waikato Regional Council's (the council's) submission regarding this document. The submission was formally endorsed by the council's Strategy and Policy Committee on 23 November 2021.

Should you have any queries regarding the content of this document please contact Senior Policy Advisor, Strategic and Spatial Planning directly on

Ngā mihi nui,



**Director Science, Policy and Information** 

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HE TAIAO MAURIORA HEALTHY ENVIRONMENT HE ÖHANGA PAKARI STRONG ECONOMY HE HAPORI HIHIRI VIBRANT COMMUNITIES

### Submission from Waikato Regional Council on the Emissions Reduction Plan Discussion Document

### Introduction

- 1. Waikato Regional Council (the Council) appreciates the opportunity to make a submission on the Emissions Reduction Plan Discussion Document (the discussion document).
- 2. We recognise the importance of climate action in the current global and national setting and highlight that as a local government authority, many of our activities are impacted by climate change. This is particularly important given our role managing activities that contribute to the emission of greenhouse gases. The Council also shares the view that well-informed policies and strategies are necessary to ensure that the country will meet the national targets set under the Climate Change Response Act 2002.
- **3.** The Council's submission responds to the discussion document's questions, focusing on the topics or questions most closely aligned with our statutory role. Our overall position can be summarised as follows:
  - a. Overall strategy: We generally support the Emissions Reduction Plan's (ERP's) guiding principles. We advocate for unconventional sinks (such as coastal sequestration sea grass beds, wetlands, and riparian planting) for sequestering carbon, and for spatial planning as a key tool to influence land use change. There is a need to invest in a forward-thinking strategy to assist the country to meet our targets, coupled with this though is the need to ensure that there is a concurrent strategy developed that takes account of 'what happens if we do not achieve the targets set'.
  - b. Working with our Tiriti partners: We submit that redress under the Treaty of Waitangi should be cognisant of climate change impacts and the effects that this may have on Māori aspirations. We also recommend working with iwi Māori to leverage knowledge of kaitiaki resource management practices. We highlight the concept of Te Oranga o te Taiaio the wellbeing of the natural environment introduced in the draft Natural and Built Environment Act as an example of such an approach.
  - c. Making an equitable transition: We support the citizens' assembly approach and recommend WRC's Sustainable Homes Scheme as one model for supporting households to reduce their emissions footprint. Councils supports investment in the low emissions economy to be a key priority for government and resources be reprioritised to support the success of the transition. Council notes that the longer action is delayed (or not prioritised) the greater the level of action needed to meet targets.
  - d. Government accountability and coordination: We submit that all governments should have to make decisions with a climate change lens. Our Council currently does this. We also recommend supporting measures such as a national stocktake of actions that encourage or discourage emissions reduction. The trajectory toward achieving targets should be consistently reported in a transparent forum. The country should be able to quickly determine where progress is being made.
  - e. Funding and finance: We support the development of policies that increase understanding of how climate change and its effects should be considered in financial terms.
  - *f. Emissions pricing:* We support the intention that forestry should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy and submit that the ETS must work alongside spatial planning and financing mechanisms. Further, we question the over-reliance of the system on the Emissions Trading Scheme

to meet the reduction targets and note the absence of alternative tools that allow for correction, in case the country fails to achieve its targets.

- g. *Planning:* In general, creating compact urban form in appropriate areas (reducing urban sprawl) and carefully selecting sites to place infrastructure will make it easier to increase the effectiveness of measures to manage the risks to energy, building and construction, agriculture, waste, and forestry. Pricing mechanisms have the potential to result in substantial land use change. Spatial planning and building controls will also be a key tool for actioning this.
- *h. Research, science, and innovation:* We submit for more central Government funding. Further, we note that as more data and information is received that processes to be established can respond with agility to this new information.
- *i. Behaviour change:* We suggest that there are lessons to learn from the example of the COVID-19 vaccination programme.
- *j. Circular and bioeconomy:* We generally support a three-stage approach as outlined in 'Taking Responsibility for our Waste', currently out for consultation, and generally support the proposals outlined in the ERP, with some additional recommendations.
- k. Transport: We support the proposed transport sector transition targets and actions and draw attention to the Waikato Region Transport Emissions tool developed by MRCagney. We also encourage the government to allow for flexibility that will enable more ambitious targets in the transport sector where better information is obtained, and where beneficial opportunities exists.
- I. Energy and industry: We support additional support for green energy source research and development of low-emissions fuels. We submit that the ETS may need refining to address consequential issues, and also that it should be made explicit as to when local government should have regard to the ERP. We also highlight the importance of having a coordinated approach to investment on wind, solar and battery capacity to complement the country's existing green energy sources. We note that these alternative energy sources can no longer be quantified as innovations, rather they can be considered as 'business as usual' energy sources
- *m.* Building and construction: We support the introduction of policies limiting emissions from fossil fuel combustion and of requirements concerning whole-of-life embodied carbon. We also support the use of differentiated carbon calculation tools for small and large buildings.
- n. Agriculture: We submit that it should be made feasible for an 'average' person to sign up for the ETS and discuss the benefits of supporting consultants and spatial planning tools, we emphasise the need for a just and equitable transition. As mentioned in the body of our submission it is critically important that sufficient tools and support are provided to this sector to enable targets to be achieved
- o. Waste: We support the targets and actions proposed for transitioning the waste sector. We submit that government investment should enable local organics diversion services, and that Regional Plans should align with banning burning and burying.
- *p. F-gases:* We advocate for alternatives to HFC refrigerants and for lower global warming potential refrigerants when both safe and affordable, and when adverse outcomes do not outweigh benefits.

- q. Forestry: We support economically viable options of forests and forestry systems that prevent exposed soil and submit spatial planning tools should designate appropriate locations. We advocate for pragmatic approaches to enable the region's continued contribution to overall social, economic, cultural, and environmental wellbeing to ensure an inclusive, equitable and well-planned transition. Equally, we highlight the importance of farming and forestry both continuing in a sustainable manner where appropriate land is used to adjust to climate change impact.
- 4. Given our statutory role as a regulator, we note that various strategies and policies proposed in the discussion document could potentially have flow-on effects for consenting. For example (from Table 4):
  - a. Setting outcomes and an approach to developing a plan for managing the phase out of fossil gas in the energy system
  - b. Developing a plan to decarbonise the industrial sector.
  - c. Reducing emissions from organic waste gas capture at landfills
  - d. Developing national direction for industrial greenhouse gases under the Resource Management Act 1991, including a ban on coal boilers.
- 5. These, and many other suggested actions and strategies, are designed to collectively reduce emissions across all the industry sectors affected. However, it is not clear whether or how these, or other similar strategies, will actually be relevant in consenting, particularly in the period before resource management planning documents have been prepared/amended to reflect the ERP (if, indeed, that is required).
- 6. This has raised a crucial question relating to the legal status of the ERP, and its various strategies and policies, in the context of consent decisions under the Resource Management Act (RMA), or subsequent legislation. This is a matter that we suggest government should provide greater clarity on
- 7. We highlight the action linked to *developing national direction for industrial greenhouse gases under the Resource Management Act 1991*, including a ban on coal boilers. We understand that a component of this national direction is <u>non-statutory</u> guidance for local authorities in how to approach the consenting of greenhouse gases (GHG), specifically the consideration of climate change effects from GHGs and how best such emissions should be managed, including through consent conditions. Even if we assumed that this guidance will be consistent with the objectives of the ERP, it is an established matter of law that non-statutory guidance carries no legal weight in RMA consent decision-making. We would expect that this national direction be introduced by 31 December 2021 when the previous prohibition on the Council's ability to consider climate change effects from GHGs when consenting, is removed.
- 8. Further, regarding the ERP in its totality, it does not appear to correspond with any of the policy documents specified in s104(1)(b) which must legally be "had regard to" when consenting. It seems likely and appropriate that the ERP could be brought into account as a relevant "other matter" in terms of s104(1)(c); however, if that is the intent and expectation of the government, then it would be useful to be clear about this, and preferably, for the ERP to explicitly state so.
- 9. Similarly, we question the government's decision to make this the only opportunity to share our views on the contents of the Emissions Reduction Plan. The discussion document notes that this is not the full draft and often refers to concurrent consultations. This means we are unable to provide feedback on the full picture and are not able to assess how the specific policies for each sector would interact with each other and the strategies that must be prepared under section 5ZG of the Climate Change Response Act. The ability to see and assess the full picture is particularly important considering the recent announcement by the Prime Minister and the Climate Change

Minister to increase New Zealand's contribution to the climate change target by pledging to reduce net greenhouse gas emissions by 50 percent by 2030<sup>1</sup>.

- 10. We raise our concern that the limited timeframe allowed to both prepare a submission and obtain endorsement of elected members may have adversely impacted the depth of discussion that could be achieved during this valuable consultation opportunity.
- 11. We look forward to future developments from this consultation process and welcome the opportunity to provide comment on the proposed policies, guidelines and regulatory changes that will result from the publish of a national Emissions Reduction Plan.

### Submitter details

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Contact person:

Senior Policy Advisor, Strategic and Spatial Planning

<sup>&</sup>lt;sup>1</sup> Press release, 31 Oct 2021: <u>https://www.beehive.govt.nz/release/govt-increases-contribution-global-climate-target</u>

Table A: Waikato Regional Council submission on the Emissions Reduction Plan Discussion Document – responses to consultation questions

| Question |   | Response   |
|----------|---|--|
| Tra      | ansition pathway  |  |
| 1.       | Do you agree that the emissions<br>reduction plan should be guided by a set<br>of principles? If so, are the five principles<br>set out above, the correct ones? Please<br>explain why or why not.                                | We generally support the principles provided, particularly avoiding "exacerbating environmental issues".<br>We caution, however, that providing for co-benefits (such as environmental and social co-benefits) within guiding<br>policy can potentially distract from the key objective of the plan – i.e., emissions reduction – and may result in<br>choosing fewer effective pathways in favour of bigger gains from co-benefits, thus limiting the plan's ability to<br>achieve the desired outcome. Therefore, we recommend that the strategies prepared to complement the plan<br>should include guidance on how to apportion weight to different co-benefits.<br>We recommend further refining the principle of "a clear, ambitious and affordable path," to outline how existing<br>regulatory tools and actions should be utilised in the creation of options. This should be aimed at avoiding<br>unnecessary costs from duplicating efforts to develop tools. We consider that a transition should build upon what<br>we know and do already. For example: using the implementation of farm management (and forestry) plans to<br>reduce emissions. |
| 2.       | How can we enable further private sector<br>action to reduce emissions and help<br>achieve a productive, sustainable and<br>inclusive economy? In particular,<br>what key barriers could we remove to<br>support decarbonisation? | <ul> <li>We suggest actions such as:         <ul> <li>Adjusting immigration settings to enable the private sector to attract the right types of professionals (such as emissions reduction and climate scientists) to drive research and development of green technologies, where there is shortage of suitably qualified professionals in the local labour market.</li> <li>Aid market acceptance by making it easier for people to make low-emission lifestyle choices and decisions. This could include financial incentives to purchase alternative means of transportation to help people</li> </ul> </li> </ul>  |
| 3.       | In addition to the actions already<br>committed to and the proposed actions in<br>this document, what further measures<br>could be used to help close the gap?  | <ul> <li>reduce reliance on road transport. Policy should enable people and companies to make money out of reducing emissions.</li> <li>Provide funding, mentoring and expertise to small and medium sized businesses to assist them to take action to reduce emissions.</li> </ul>  |
| 4.       | How can the emissions reduction plan<br>promote nature-based solutions that are<br>good for both climate and biodiversity?  | We <u>support the development of methods for tracking emissions and removals by sources and sinks not yet</u><br><u>included in the country's domestic or international target accounting, such as organic soils and biomass</u> . The use<br>of alternative nature-based carbon sequestration methods/unconventional carbon sinks or storage (those<br>currently not in the ETS) should be recognised, and research to quantify those methods should be promoted.<br>We <u>recommend the use of coastal sequestration sea grass beds, wetlands, and riparian planting that subsequently</u><br><u>enhance ecosystems</u> .  |

|    |  | Wetlands, particularly those that accumulate peat, are important carbon sequesters. According to data from Ramsar (Briefing Note 10: Wetland Restoration for Climate Change Resilience. (2018)) <sup>2,</sup> although wetlands account for 5-8% of the earth's land surface they hold between 20-35% of its estimated global soil carbon. Restoration of wetlands directly sequesters carbon and prevents loss of carbon due to oxidation of peat soils. Restoration would also impart co-benefits associated with increased biodiversity, better water quality and quantity management. Council offers to work with the Government to develop methods to track emissions and removals from riparian planting. Riparian planting where the average tree crown width is less than 30m and not contiguous with another area that meets the definition of forest is currently excluded from the ETS, thus, it does not count as mitigation towards our climate change targets. Council has an active and extensive programme for assisting landowners with fencing and planting riparian margins and holds detailed records and maps that would put us in a position to coordinate registration of riparian margins in the ETS. |
|----|--|---|
| 5. | Are there any other views you wish to<br>share in relation to the Transition<br>Pathway?                             | We submit that there needs to be more research into native sequestration, particularly concerning biodiversity, ecosystems and blue carbon.         We submit that the plan needs to provide greater clarity about the role local government is expected to play in delivering specific actions of the Emissions Reduction Plan. Further, we recommend grounding those policies on a partnership between central and local government., as identified in the advice from the Climate Change Commission. It is critical that there is clarity in respect to the roles and responsibilities, also there should be no unfunded mandates created as part of the Transition pathways.  |
| He | lping sectors adapt  |   |
| 6. | Which actions to reduce emissions can<br>also best improve our ability to adapt to<br>the effects of climate change? | Overall, we consider that an integrated approach to land use change and spatial planning will be vital for reducing<br>emissions while improving our ability to adapt to the effects of climate change. This should be based on data and<br>careful consideration of asset exposure and risk assessments. With this we recommend the following actions could<br>assist in mitigating the risks for the different sectors:   |

<sup>&</sup>lt;sup>2</sup> https://www.ramsar.org/sites/default/files/documents/library/bn10\_restoration\_climate\_change\_e.pdf

| [ |   |
|---|---|
|   | <ul> <li>Transport         <ul> <li><u>Prioritise Waka Kotahi's National Resilience Programme</u> and the information from its related risk assessment to guide decision about further investment and retreat where appropriate. This should also include prioritising expenditure in transport assets and infrastructure, including charging stations, in areas where it would help communities increase their resilience to climate change.</li> </ul> </li> </ul>  |
|   | <ul> <li>Energy and Industry         <ul> <li>Diversification (a diversified energy mix) and localisation of energy systems will increase their resilience.<br/>This should consider the sustainable use of different resources and be passed on the environmental limits around different sources<sup>3</sup>. Research on the benefits of diversified energy mixes has found these are beneficial for remote areas, especially islands<sup>4</sup>.</li> </ul> </li> </ul>  |
|   | <ul> <li>Building and construction</li> <li>Any solutions in this area should prioritise nature-based solutions to help adaptation.</li> <li>Resilience can be increased by leveraging existing tools under the Building and Resource Management Acts. Actions include requiring that buildings be relocatable when placed in areas of known natural hazard risks, or the use of rain collection systems in drought prone areas. Although many local government authorities are already doing this, the system requires better funding and direction from central government to gather the necessary data for hazard identification and risk assessments. This could be greatly assisted by the formulation of a National Policy Statement for Natural Hazards with a strong focus on climate change resilience.</li> <li>Avoiding incentives for the further development of urban form in areas susceptible to risk from natural hazards, in particular coastal inundation.</li> </ul> |
|   | <ul> <li>Agriculture <ul> <li>We note that that the agriculture sector is going to be severely affected by climate change, however further work is needed to understand what the future of agriculture will look like in the context of emerging technologies and legislation.</li> <li>We suggest that government research and funding should prioritise rural communities where the impacts of climate change are more immediate. This should include access to technology and technical assistance to facilitate transition to a different primary activity where appropriate.</li> </ul> </li> </ul>  |

<sup>&</sup>lt;sup>3</sup> Xianguo Li (2004). Diversification and localization of energy systems for sustainable development and energy security. <u>https://doi.org/10.1016/j.enpol.2004.05.002</u> <sup>4</sup> Marine Cauz, Lionel Bloch, Christian Rod, Lionel Perret, Christophe Ballif, Nicolas Wyrsch (2020). Benefits of a Diversified Energy Mix for Islanded Systems. <u>https://doi.org/10.3389/fenrg.2020.00147</u>

|  | <ul> <li>Waste</li> <li>Carry out an appropriate natural hazards risk assessment to determine the location of landfills and contaminated site. This should also include the decision to stop this land use if the risk from natural hazards is deemed too high.</li> </ul>  |
|--|---|
|  | <ul> <li>Forestry         <ul> <li>Planting the right tree for the situation in the context of sequestration. Referencing international examples to find the right balance between biodiversity outcomes, emissions reductions, and favourable outcomes. We draw attention to the ten 'golden rules' for reforestation established by scientists from the Royal Botanic Gardens, Kew (RBG Kew) and Botanic Gardens Conservation International (BGCI) to help guide consideration of reforestation across all contexts to ensure that reforested areas can be effective, long-term carbon sinks, while also stopping the loss of biodiversity and supporting livelihoods<sup>5</sup>.</li> <li>Locating production forests in appropriate places (not subject to landslides, fires, excess rainfall).</li> <li>Enhancing riparian plantings.</li> </ul> </li> </ul>  |
|  | In general, <u>creating compact urban form in appropriate areas (reducing urban sprawl) and carefully selecting sites</u><br><u>to place infrastructure</u> will make it easier to increase the effectiveness of measures to manage the risks to energy,<br>building and construction, agriculture, waste, and forestry. Pricing mechanisms have the potential to result in<br>substantial land use change. Spatial planning and building controls will also be a key tool for actioning this.  |
| 7. Which actions to reduce emissions could<br>increase future risks and impacts of<br>climate change, and therefore need to be<br>avoided? | <ul> <li>We caution that the following actions to reduce emissions could increase future risks and impacts of climate change:         <ul> <li><u>The planting of monoculture forests</u> which can result in fires and problems with land instability when shallow-rooted trees, not adapted for high rainfall events, are planted.</li> <li><u>Compact urban form in high risk areas.</u></li> <li><u>The utilisation of certain species of trees (e.g., gum, poplar, oak and willow trees and oil palms) that release high levels of volatile organic compounds (VOCs).</u> This adverse effect is heightened as air temperatures increase which can generate localised ozone which is a respiratory irritant and linked to asthma and other respiratory illnesses. In addition to this the effect, the VOCs release can also exacerbate climate change. This means that it is very important to plant the right species.</li> </ul> </li> </ul> |

<sup>&</sup>lt;sup>5</sup> <u>https://www.kew.org/about-us/press-media/10-golden-rules-for-restoring-forests</u>

|     |  | <ul> <li><u>Shifting to biomass burning for energy</u>. Although this would reduce the use of fossil fuel, it could also have<br/>detrimental effects on localised air quality and can impact our ability to counter global warming. Biomass<br/>burning is assumed to be carbon neutral but often is not, especially when, for example, wood pellets are<br/>made by cutting down whole trees rather than using waste wood products. Further, it can take trees many<br/>decades to grow enough to offset the carbon released.</li> </ul>   |
|-----|--|--|
| Wo  | rking with our Tiriti partners   |  |
| 8.  | The Climate Change Commission has<br>recommended that the Government and<br>iwi/Māori partner on a series of national<br>plans and strategies to decarbonise our<br>economy. Which, if any, of the strategies<br>listed are a particular priority for<br>your whānau, hapū or iwi and why is this? | While we cannot make comment on the specific aspirations of iwi/hapu/whanau in our region, we highlight that<br>we have developed a Climate Roadmap that takes iwi views into account. Our Roadmap <sup>6</sup> identifies climate change<br>impacts such as ongoing sea level rise, changes in rainfall and drought, extreme weather events and increasing fire<br>weather will have through increased risks to iwi/Māori social, cultural, spiritual and economic wellbeing.<br><u>We submit that future redress under the Treaty of Waitangi should account for climate change and the effects</u><br>that this will have on Māori aspirations to use and develop their land or exercise their customary practices, |
| 9.  | What actions should a Māori-led<br>transition strategy prioritise? What<br>impact do you think these actions will<br>have for Māori generally or for our<br>emission reduction targets? What impact<br>will these actions have for you?  | <u>particularly in the coastal environment.</u> Research funded by the Deep South National Science Challenge notes that<br>Māori owned land is at risk of being lost, damaged, or devalued by coastal inundation <sup>7</sup> . Through work on coastal<br>adaptation Council has done in collaboration with district councils, we have found that tangata whenua have great<br>concerns about the effects natural hazards will have on their whenua and their ability to exercise customary rights.<br>We also recommend working with iwi Māori to leverage knowledge of kaitiaki resource management practices.  |
| 10. | What would help your whanau,<br>community, Māori collective or business<br>to participate in the development of the<br>strategy?   | We highlight the concept of Te Oranga o te Taiaio – the wellbeing of the natural environment – introduced in the draft Natural and Built Environment Act as an example of such an approach.  |
| 11. | What information would your Māori<br>collective, community or business like to<br>capture in an emissions profile? Could<br>this information support emissions<br>reductions at a whanau level?  |  |
| 12. | Reflecting on the Commission's recommendation for a mechanism that   |  |

<sup>&</sup>lt;sup>6</sup> https://www.waikatoregion.govt.nz/assets/WRC/WRC-2019/Climate-Roadmap.pdf

<sup>&</sup>lt;sup>7</sup>Catherine Iorns (2019). Treaty of Waitangi duties relevant to adaptation to coastal hazards from sea-level rise. <u>https://deepsouthchallenge.co.nz/wp-content/uploads/2020/12/Treaty-of-Waitangi-duties-relevant-to-adaptation-to-coastal-hazards-from-sea-level-rise.pdf</u>

| would build strong Te Tiriti partnerships,<br>what existing models of partnership are<br>you aware of that have resulted in good<br>outcomes for Māori? Why were they<br>effective?   |   |
|---|---|
| Equitable Transitions Strategy  |   |
| 13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?  | We support the objectives for an Equitable Transition Strategy.         We recommend adding an objective to support small and medium business owners to transition into low emissions business models. According to data from MBIE, 97% of New Zealand firms are small and micro businesses – including self-employed. This means that a vast majority of New Zealand companies might find it hard to benefit from efforts to retrain the workforce, due to the investment tied to each specific business and the difficulty for small business owners to change their business models.   |
| 14. What additional measures are needed to<br>give effect to the objectives noted by the<br>Climate Change Commission and any<br>other objectives that you think should be<br>included in an Equitable Transitions<br>Strategy? | As part of supporting small businesses, the government should target assistance to those firms that service industries in sectors where fossil fuels are being phased out. This would include for small companies in the coal extraction industry. Assistance should be targeted to facilitate the move to different industries where possible.   |
| 15. What models and approaches should be<br>used in developing an Equitable<br>Transitions Strategy to ensure that it<br>incorporates and effectively responds to<br>the perspectives and priorities of<br>different groups?    | We support the citizens' assembly approach, seeing the selection process as a good way of countering some of<br>the shortcomings of the traditional stakeholder engagement approach. We believe these assemblies give people<br>the opportunity to engage experts, the citizens do not only vote on the issues but have to give account as to why<br>they decide in a particular way.We recommend investigating existing initiatives at a local level.<br>The "Just Transition" for Taranaki <sup>8</sup> partnerships<br>an example of how local government can work with communities and businesses to create regulatory<br>opportunities to transition people away from fossil fuels. We considered that the government should evaluate<br>how to scale up such an approach to achieve national benefit. |
| Other actions   |   |
| 16. How can Government further support<br>households (particularly low-income   | We recommend households could be supported to reduce their emissions through:   |

<sup>&</sup>lt;sup>8</sup> https://www.taranaki.co.nz/vision-and-strategy/taranaki-2050-and-tapuae-roa/taranaki-2050/what-is-a-just-transition/

| households) to reduce their emissions<br>footprint?   | <ul> <li>Land use that provides affordable housing opportunities near employment in well-planned communities with access to appropriate infrastructure, including public transport.</li> <li>Urban planning that created more localised facilities and services.</li> <li>Support of home improvement/energy efficiency schemes, such as the Sustainable Homes Scheme that WRC is working to establish under the Long-term Plan that will help homeowners make sustainable improvements</li> <li>Taking an integrated approach to improving the stock of energy efficient residential buildings</li> <li>Provision of subsidised public transport.</li> </ul>   |
|---|---|
| 17. How can Government further support<br>workers at threat of displacement to<br>develop new skills and find good jobs with<br>minimal disruption? | No response.  |
| 18. What additional resources, tools and<br>information are needed to support<br>community transition planning?                                     | We suggest that targeted funding be provided to economic development agencies, NGOs, and other groups to provide transition planning and assistance with emission reduction actions. Also, existing systems and arrangements, such as the Citizens Advice Bureau, are utilised and facilitated to support their communities.  |
| 19. How could the uptake of low-emissions<br>business models and production methods<br>be best encouraged?  | We suggest that continued improvement of the ETS will be beneficial in encouraging the uptake of low-emissions business models and production methods.         We recommend providing greater education, extending to information, packaging, and labelling to help people understand the impact of their emissions as much as they understand costs. Further, the provision of guidance should help people understand how to access funding and support.   |
| 20. Is there anything else you wish to share in<br>relation to making an equitable<br>transition?   | In reference to the altered budgets, we caution that there is a risk of creating inequitable outcomes as a result of the steeper transition now required by the next two budgets. It is highlighted that aggressive actions may be to achieve outcomes, and that these aggressive actions may be progressed rapidly with inadequate assessment of their impacts on all socio-economic groups.<br><u>Council recommends expanding the capacity of MBIE's Just Transitions Unit</u> . Increased capacity at the central government level will facilitate charting a path for all of the key areas and will provide access to experience and support to enable the delivery of a just transition under the emissions reduction plans to be released in May 2022 and in the future. Similarly, we suggest including financial support and funding for iwi to build their capacity and work closely with both the MBIE Just Transitions Unit and the MfE Transitions Team. |
| Government accountability and coordination  |   |
| 21. In addition to the Climate Change<br>Commission monitoring and reporting on   | <u>We recommend:</u> <u>The introduction of Key Performance Indicators (KPIs).</u>  |

|     | progress, what other measures are<br>needed to ensure government is held<br>accountable?  | <ul> <li>Increased focus for actions on sectors where the greatest decreases in emissions can be achieved without huge effort.</li> <li>Undertaking a national stocktake on details of specific actions that encourage or discourage emissions reduction. For example, private plan changes for new greenfield development have the potential to affect our ability to reduce emissions due to cleanfill, compacting, and concreting that may be necessary to prepare land for development.</li> <li>We submit that decision makers in central and local government, and their controlled organisations, should have to make decisions with a climate change lens, as per the WRC model, assessing potential emissions reductions or increases, and ability to respond to effects of climate change.</li> <li>We again caution that rushing to make progress could be a problem and result in inequitable outcomes.</li> </ul> |
|-----|---|--|
| 22. | How can new ways of working together<br>like mission-oriented innovation help<br>meet our ambitious goals for a fair and<br>inclusive society and a<br>productive, sustainable and climate-<br>resilient economy? | No response.   |
| 23. | Is there anything else you wish to share in<br>relation to government accountability and<br>coordination?   | We recommend developing regulations to ensure that tools for measuring and reporting on emissions are  |
|     |   | <u>consistent and appropriate for the New Zealand context</u> . This would guarantee that the tools are used consistently<br>and have been contextualised for our industries.<br><u>Council also submits that all policies to achieve the transition should be designed to allow for more ambitious</u><br><u>targets to be set and for some targets to be brought forward, as better data and technology become available</u> .   |
|     |   | There is also a need for clear, consistent, and regular reports from the government of the delivery of the Emissions<br>Reduction Plan and the emissions budgets. Although we acknowledge that there are provisions for the publication<br>of emissions budgets and the emissions reduction plans under the Climate Change Response Act, <u>we submit that</u><br><u>consistent messaging on the state of affairs</u> , using real-time data, to spell out the implications for and actions<br><u>required from government</u> , businesses and the community will enable the country to better understand the<br><u>challenges and opportunities of the transition</u> .  |

| 24. | What are the main barriers or gaps that<br>affect the flow of private capital into low-<br>emissions investment in Aotearoa?  | We consider the discussion document identifies the main barriers adequately.  |
|-----|---|---|
| 25. | What constraints have Māori and Māori<br>collectives experienced in accessing<br>finance for climate change response<br>activities?   | No response.  |
| 26. | What else should the Government<br>prioritise in directing public and private<br>finance into low-emissions investment<br>and activity?   | No response.  |
| 27. | Is there anything else you wish to share in relation to funding and financing?  | Council supports the development of policies that increase understanding of how climate change and its effects should be considered in financial terms, like the legislation introduced to require mandatory climate-related disclosures to listed companies, large insures, banks, non-bank deposit takers and investment managers.  |
| En  | nissions pricing  |   |
| 28. | Do you have sufficient information on<br>future emissions price paths to inform<br>your investment decisions?   | We suggest that further work is necessary to understand the implications of future emissions price paths on local government spending, especially regarding construction and maintenance of infrastructure assets. Local government organisations are subject to public consultation processes to determine levels of investment and funding of works, as well as bound by legislative requirements to maintain levels of service for existing infrastructure.  |
| 29. | What emissions price are you factoring into your investment decisions?  | As outlined above, further work is needed.  |
| 30. | Do you agree the treatment of forestry in<br>the New Zealand Emissions Trading<br>Scheme (NZ ETS) should not result in a<br>delay, or reduction of effort, in reducing<br>gross emissions in other sectors of the<br>economy? | We support the statement that forestry should not result in a delay, or reduction of effort, in reducing gross<br>emissions in other sectors of the economy. We further caution that there are negative socio-economic effects of<br>having forestry everywhere.<br>We query whether an adequate analysis, establishing the most cost-effective approach is to allow some offsets<br>now by planting trees and buy a little extra time for people to transition, has been undertaken by Government.   |
| 31. | What are your views on the options<br>presented above to constrain forestry<br>inside the NZ ETS? What does the<br>Government need to consider when<br>assessing options? What unintended                                     | We do not have any comments on the options outlined in the discussion document, given the limited detail behind<br>the assumptions the government would make to determine how these would work in practice. However, we agree<br>that any actions should follow the thinking behind the Climate Change Commission's recommendation to make<br>further amendments to the ETS and ensure that the ETS contributes to reductions in gross emissions and guarantee<br>flexibility of land use. We note that the discussion document already acknowledges this by noting that "while the |

| Ī   | consequences do we need to consider to<br>ensure we do not unnecessarily restrict<br>forest planting?  | emissions removed by exotic forest planting can offset gross emissions, this is a one-off benefit, and means the land must remain in forest permanently. This reduces the flexibility of land use and delays reducing gross emissions."  |
|-----|--|--|
| 32. | Are there any other views you wish to share in relation to emissions pricing?  | We suggest investigating methodologies to factor in the social cost of carbon. This would be consistent with the approach used the 6 <sup>th</sup> assessment report from the IPCC that assesses the different mitigation pathways through Integrated Assessment Models, using both Representative Concertation Pathways (RPC) and Shared Socioeconomic Pathways (SSP).<br>We submit that the ETS must work alongside spatial planning and financing mechanisms to ensure that the best-   |
|     |  | suited crops are planted in the right circumstances/locations.   |
| Pla | nning  |  |
| 33. | In addition to resource management<br>reform, what changes should we<br>prioritise to ensure our planning system<br>enables emissions reductions across<br>sectors? This could include partnerships,<br>emissions impact quantification for<br>planning decisions, improving data and<br>evidence, expectations for crown entities,<br>enabling local government to make<br>decisions to reduce emissions. | As stated above, we consider that land use change and spatial planning will be vital for reducing emissions while improving our ability to adapt to the effects of climate change. We strongly suggest that government should prioritise using existing planning legislation to manage emission reductions.<br>We recommend developing a National Environmental Standard under the Resource Management Act to direct local government in how to take into account greenhouse gas emissions when exercising their functions within the RMA and to provide much needed clarity and guidance. This would be consistent with the repeal of sections 70A and 104E of the RMA, without the need to go through the plan change process or wait for the proposed RMA reforms. It would make sure that the timing of the solution reflects the urgency of the problem. This should be done conjunction with national stocktake on details of specific actions that encourage or discourage emissions reduction. For example, identifying how private plan changes have a potential to affect our ability to reduce emissions due to cleanfill, compacting, and concreting that may be necessary to prepare land for development. We also submit that a clear understanding of natural hazards and climate change risk is crucial for local authorities to avoid decisions that could result in increased emissions. Such would be the case of an urban development that needs to be enabled by physical protection works to ensure its long-term viability. We consider that this can be done by leveraging existing tools under the Building and Resource Management Acts. This could be done by interest the the set of the solution works to ensure its long-term viability. |
| 34. | What more do we need to do to promote<br>urban intensification, support low-<br>emissions land uses and concentrate<br>intensification around public transport<br>and walkable neighbourhoods?   | Introduce incentives that will favour planning practices promoting urban intensification in appropriate places. The regulations we suggested above should be accompanied by incentives for developer and urban dwellers to adopt a low-emissions lifestyle.  |

| 35. Are there any other views you wish share in relation to planning?   | to We are concerned about the lack of detailed proposals in the discussion document and the over-reliance on an eventual Emissions Reduction Plan on legislation that has not been proposed yet and will take longer than the first emissions budget period to be implemented.  |
|---|---|
| Research, science and innovation  |   |
| 36. What are the big challenges, particularound technology, that a mission-bapproach could help solve?  | larly We consider that a great challenge is transitioning to new clean energy sources that are not based on fossil fuels.<br>hased  |
| 37. How can the research, science and<br>innovation system better support se<br>such as energy, waste or hard-to-ab<br>industries?  | We support the approach of having mission-oriented innovation and concur that this should focus on new low-<br>emissions technology to help address sector-specific problems. However, this should be coupled with investigation<br>on the use of existing technology, already commercially available that is competitive and can be deployed to<br>market before 2025 with the right societal choices. This should also include social and economic research to help<br>firms understand the costs and benefits of transitioning to a less-carbon intensive model. |
| <ol> <li>What opportunities are there in are<br/>where Aotearoa has a unique globa<br/>advantage in low-emissions abatem</li> </ol>   | as No response<br>ent?  |
| 39. How can Aotearoa grow frontier firm<br>have an impact on the global green<br>economy? Are there additional<br>requirements needed to ensure the<br>growth of Māori frontier firms? How<br>we best support and learn<br>from mātauranga Māori in the scier<br>and innovation systems, to lower<br>emissions? | ns to No response<br>v can<br>ce  |
| 40. What are the opportunities for inno-<br>that could generate the greatest<br>reduction in emissions? What emiss<br>reduction could we expect from the<br>innovations, and how could we qua<br>it?  | vation No response<br>ions<br>se<br>ntify   |
| 41. Are there any other views you wish share in relation to research, scienc innovation?  | to <u>We submit that research, science, and innovation need more focussed central Government funding.</u><br>e and  |
| Behaviour change  |   |

| 42. | What information, tools or forums would<br>encourage you to take greater action on<br>climate change?   | We suggest that there are lessons to learn from the example of the COVID-19 vaccination programme, which highlighted the need to adapt different behaviour change methods to increase knowledge and awareness. This involves work with specific communities and taking a grassroots approach to informing communities.  |
|-----|---|---|
| 43. | What messages and/or sources of<br>information would you trust to inform<br>you on the need and benefits of reducing<br>your individual and/or your businesses<br>emissions?                  | No response   |
| 44. | Are there other views you wish to share in relation to behaviour change?  | Council it is noted that there need to be corresponding changes to the 'system' in order to support the desired<br>behaviour change. If the system is not in place the make change as frictionless as possible no amount of changes<br>to behaviours will be successful. It is important to make the necessary systemic changes to enable ease of change<br>uptake.   |
| Mo  | ving Aotearoa to a circular economy   |   |
| 45. | Recognising our strengths, challenges,<br>and opportunities, what do you<br>think our circular economy could look like<br>in 2030, 2040, and 2050, and what do we<br>need to do to get there? | Generally, we support the proposed three stage approach outlined in the Taking Responsibility for our waste consultation, with some modifications.<br>The consultation acknowledges the need to have "widespread changes in mindset, systems and behaviour" in stage 2, but education, change in mindset and behaviour should be a priority at each stage. It is essential for all stakeholders to have a common understanding of circular economy principles and co-develop how circular economy is expressed in order to avoid contrary actions or "greenwashing".  |
|     |   | We are doubtful that "bringing resource recovery systems up to global standards" represents the level of ambition<br>that is needed as the "global standard" still varies across the world. Up until China National Sword, most Western<br>countries were sending poor quality plastics offshore under the banner of recycling. Without defining what the<br>"global standard" is, we have concerns that this is replicating poor practice. While we can learn from overseas<br>examples, we propose that Aotearoa New Zealand define our own standard of resource recovery system with a<br>well-articulated level of ambition reflective of our unique situation. |
|     |   | It is not clear what differentiates "bringing our resource recovery systems up to global standards" in stage 1 and "optimising resource recovery for growing circular systems" in stage 2. Ideally, we could establish resource recovery systems that are already optimised for a circular economy in stage 1. In addition, equitable funding needs to be made available to create and operate modern resource recovery.  |

|     |   | Stage 1 should include the roll out of mandatory product stewardship schemes that align with the higher part of the waste hierarchy. This should be rolled out in a timely manner.   |
|-----|---|--|
| 46. | How would you define the bioeconomy<br>and what should be in scope of a<br>bioeconomy agenda? What opportunities<br>do you see in the bioeconomy<br>for Aotearoa? | There are many opportunities, especially for local food production and biological/organic material processing which can create resilience and employment in communities.   |
| 47. | What should a circular economy strategy<br>for Aotearoa include? Do you agree the<br>bioeconomy should be included within a<br>circular economy strategy?         | Circular economy is a Eurocentric term which is being used as a framework that should allow further development<br>to occur. Circular economy is not a new concept, but it is a relatively new term. Aotearoa New Zealand is in a<br>unique position because alignment with the underlying principles of circular economy are already a significant part<br>of Te Ao Māori. A circular economy strategy should be grounded in this.  |
|     |   | The circular economy strategy needs to be developed in tandem with the country's waste minimisation strategy. Council agrees that creating a circular self-sustaining economy has the potential to reduce climate emissions through preventing waste at the source. Circularising the economy promises to prevent waste and emissions while creating jobs through redesign, shorter supply chains and interdisciplinary relationships. This is possible through robust implementation that challenges our current linear frameworks. |
| 48. | What are your views of the potential<br>proposals we have outlined? What work<br>could we progress or start immediately<br>on a circular economy and/or           | We <b>caution</b> that accelerating the uptake of bioenergy needs to be done carefully to avoid increasing emissions.<br>Policies enabling bioenergy should prioritise the use of existing waste streams and avoid the use biomass from the<br>felling of trees for fuel, where consequential issues are faced in accounting of the ETS.   |
|     | bioeconomy before drawing up a comprehensive strategy?  | The first step is developing a common understanding of circular economy principles and how this will look in real life. Otherwise, the movement will be at risk of "greenwashing". Developing partnership is key for this purpose, and as an essential part of a circular economy.   |
|     |   | We generally <b>support</b> the potential proposals outlined, with some modifications. Further science and innovation support and accelerating the uptake of bioenergy need to consider the benefit of local scale solutions, in addition to national centralised solutions.   |
| 49. | What do you see as the main barriers to   | Transitioning to a circular economy needs to be a whole of society approach. This is a different system that presents  |
|     | taking a circular approach, or expanding  | a threat to our current economic model investments and businesses. For example, maintaining a 2°C increase   |
|     | the bioeconomy in Aotearoa?   | scenario represents a \$2.3 trillion loss for the oil and gas industries". Petrochemical companies are still planning  |

<sup>&</sup>lt;sup>9</sup> 2 degrees of separation – Transition risk for oil and gas in a low carbon world - Carbon Tracker Initiative

|     |  | growth in the plastics industry estimated at \$400b from 2019-2025 <sup>10</sup> , representing a large lobby that could |
|-----|--|--|
|     |  | undermine progress in both emissions and waste reduction. The legislation put in place needs to be ambitious             |
|     |  | enough to stand up to the momentum of the linear lobby.  |
| 50. | The Commission notes the need for cross- | Regulations:   |
|     | sector regulations and investments that  | - Regulate and restrict categories of plastic additives and monomers such as bisphenols, phthalates, per-                |
|     | would help us move to a more circular    | and polyfluoroalkyl substances PFASs, and styrenes. Producers should then be required by law to prove                    |
|     | economy. Which regulations and           | their products are free of endocrine disrupting chemicals, will not contaminate nor degrade soil health,                 |
|     | investments should we prioritise (and    | will not prove hazardous to wildlife, will not degrade into problematic micro- and nano-plastics, will not               |
|     | why)?                                    | raft pathogens and invasive species in marine/freshwater ecosystems, will not contaminate other waste                    |
|     |  | streams, and will not emit methane when poorly managed post-consumption.   |
|     |  | - Standards of durability should be applied to necessary plastics such as car tyres. Repair and remanufacture            |
|     |  | should be incentivised.  |
|     |  | - Regulation to incentivise reusables rather than more single use products (i.e., compostables – such as                 |
|     |  | through single use tax)  |
|     |  | - Ban organics from landfill   |
|     |  | - If organics are banned from landfill, there will be an increase in organics processing. The quality of compost         |
|     |  | needs to be safeguarded to ensure the product can be returned to the earth as part of a positive biological              |
|     |  | system. Standards need to be set to ensure contaminants (such as plastic. PFAS and broadleaf herbicides)                 |
|     |  | are eliminated or mitigated from compost.  |
|     |  | - Applying a regulatory approach for single use compostable products to avoid negative implications if waste             |
|     |  | is unaddressed and this simply results in replacing one single-use product by another one. This includes                 |
|     |  | compostability standards as well as regulations to ensure transparency about what is contained in                        |
|     |  | compostable products, and bans on problematic additives, such as PFAS.   |
|     |  | - Increase the waste levy to \$140/tonne (applying to landfills and incineration and pyrolysis) to match                 |
|     |  | international best practice and incentivise designing waste out of the system and establish high penalties               |
|     |  | for unlawful waste disposal to ensure compliance.  |
|     |  | - Regulate product design that aligns with the waste hierarchy, doesn't undermine recycling systems and is               |
|     |  | included in a Duty of Care in Aotearoa New Zealand (for example, plastic sleeves and lightproof bottles                  |
|     |  | reduce recyclability).   |
|     |  | <ul> <li>Identify and implement the best recycling labelling system for NZ.</li> </ul>                                   |
|     |  |  |
|     |  | Investments  |

<sup>&</sup>lt;sup>10</sup> <u>Plastics Infographic4 (carbontracker.org)</u>

|  | <ul> <li>Support territorial authorities and community to develop local or regional organics processing options through capital and operational funding and subsidy.</li> <li>Invest in town, district and regional solutions, smaller loops which create community resilience and job creation.</li> <li>Support the implementation of a product stewardship and traceability scheme</li> </ul>  |
|--|---|
| 51. Are there any other views you wish to<br>share in relation to a circular economy<br>and/or bioeconomy?   | No further comment.   |
| Transport  |   |
| 52. Do you support the target to reduce<br>vehicle kilometres travelled by cars and<br>light vehicles by 20 per cent by 2035<br>through providing better travel options,<br>particularly in our largest cities, and<br>associated actions? | We support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035<br>through providing better travel options, particularly in our largest cities, and associated actions. We highlight the<br>emissions reduction tool developed for the Waikato (Waikato Region Transport Emissions tool developed<br>by MRCagney <sup>11</sup> ). Just making a specific adjustment to reducing trips by approximately 20% will incur in a<br>corresponding 15% expected reduction in transport emissions. This needs to be provided in conjunction with<br>promoting and investing in other transport modes especially walking, cycling, PT and micro mobility options. |
| 53. Do you support the target to make 30 per<br>cent of the light vehicle fleet zero-<br>emissions vehicles by 2035, and the<br>associated actions?  | We support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions. Again, using the Waikato Region Transport Emissions tool, holding all other factors constant, an improvement in vehicle fleet composition to become 30% corresponds to a 21% reduction in annual transport emissions by 2030. We strongly support the Clean Car Discount initiative to support the transition of private vehicles to low/no carbon options.   |
| 54. Do you support the target to reduce<br>emissions from freight transport by 25<br>per cent by 2035, and the associated<br>actions?  | We support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions. The specific contribution of Heavy Vehicles to the overall vehicle emissions total far exceeds the proportion of the fleet that Heavy Vehicles make up. Shifting to low carbon fuel sources will have a direct improvement on overall transport emissions.   |
|  | investigating in the implementation of a Heavy Goods Vehicle Charge under the National Rail Plan in areas where<br>rail is a viable alternative. This should include prioritisation of expenditure for key transport corridors that can<br>switch to rail. We suggest this could fit well within the National Rail Plan. New Zealand could learn from<br>Switzerland's experience on transferring its transalpine freight traffic from road to rail, that has resulted in 70% of<br>freight being transported by rail <sup>12</sup> .   |

https://wrc-emissions.mrcagney.works/dashboard
 https://www.bav.admin.ch/bav/en/home/modes-of-transport/railways/rail-freight-transport/transfer-from-road-to-rail.html

|     |   | To support the target to reduce freight emissions, the government should direct further investment to studies<br>showing which areas are better at reducing freight emissions without "picking winners" due to the rapidly changing<br>pace of technological innovation in transport, which could leave some operators with stranded assets. This should<br>include exploring opportunities for railway or other less emissions intensive means such as domestic sea freight.<br>This needs to build on previous work by Waka Kotahi on coastal shipping and modal freight choice.   |  |
|-----|---|--|--|
| 55. | Do you support the target to reduce the<br>emissions intensity of transport fuel by 15<br>per cent by 2035, and the associated<br>actions?  | We support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions. Using the Waikato Region Transport Emissions tool, holding all other factors constant, an improvement in vehicle fleet emissions by 15% corresponds to an 8% reduction in annual transport emissions. The initiatives of the Clean Car Standard are strongly supported.  |  |
| 56. | The Climate Change Commission has<br>recommended setting a time limit on light<br>vehicles with internal combustion engines<br>entering, being manufactured, or<br>assembled in Aotearoa as early as 2030.<br>Do you support this change, and if<br>so, when and how do you think it should<br>take effect? | We support the setting of a time limit on light vehicles with internal combustion engines (ICEs) entering, being manufactured, or assembled in Aotearoa as early as 2030.<br>We caution that in doing so, the requirement to ensure that there is an equitable transition should be kept in mind, and the transition should be progressed in such a way so as not to disadvantage sectors of society. This is especially important if there is a corresponding increase in traditional carbon fuel costs. This may then result in disproportionately large increases in transport costs for low-income households which will not be able to make a quick shift to low carbon vehicles, mainly if the current cost differential continues to see a premium attached to  |  |
| 57. | Are there any other views you wish to share in relation to transport?   | We agree that transport has an opportunity to contribute to meeting the short- to medium-term targets that the carbon budgets require. This will require a combination of behaviour change to shift to low carbon modes of transport, shifting the need to travel, providing better transport options and support to make these transitions. Great gains can be made within urban areas, but this will need to be undertaken in conjunction with investment in new infrastructure to make sure that alternative modes are viable and attractive modes of mobility. This should include funding schemes, such as feebates, to incentivise the uptake of micro mobility, bicycles and e-bikes, and the introduction of subsidies for public transport to target specific sectors of the population that are more negatively affected by car dependency (e.g. Community Services and Super Gold cardholders, and youth). We suggest investigating the benefits of modifying the exhaust emissions standard to include greenhouse gas emissions from the light vehicle fleet. This would require amending the Land Transport Rule for vehicle exhaust emissions and could be brought in as part performance metrics under the Warrant of Fitness and Certificate of Fitness tests. |  |
| Ene | Energy and industry   |  |  |
| Ene | Energy strategy   |  |  |

| 58. In your view, what are the key<br>priorities, challenges and opportunities<br>that an energy strategy must address to<br>enable a successful and equitable<br>transition of the energy system?                   | We consider the biggest issue is offshoring the use of fossil fuels. We submit that phasing out fossil fuels, such as<br>the case for coal, could see an increase on exports to other markets, which would mean that emissions are not<br>reduced they are just emitted somewhere else. This is very important to consider since according to data from the<br>Ministry for Business, Innovation and Employment <sup>13</sup> , New Zealand's in-ground coal resources are more than 16<br>billion tonnes, of which 80% are lignite in the South Island, which primarily used for electricity generation.<br>We note that New Zealand exports a lot of high-quality coal/fossil fuels to Indonesia and Australia, while importing<br>coal and fuel of a lower quality to use at Huntly. We suggest that it be considered what can be done to address<br>that. |
|--|---|
| 59. What areas require clear signalling to set<br>a pathway for transition?  | We recommend continuing prioritising emissions reductions for process heat.         We support the facilitation of transition for those industries/companies that are committed to reducing their emissions.         We support the administration of additional funding to support to green energy source research and development.         There are a lot of people (in Universities and CRIs) who are competing for limited funding. Increased funding would mean more options could be looked at across the board (including geothermal).  |
| Setting targets for the energy system  |   |
| 60. What level of ambition would you like to<br>see Government adopt, as we consider<br>the Commission's proposal for a<br>renewable energy target?  | We recommend that a target of 50% should be a minimum, but that any higher target should be matched with funding to research to improve the access to other resources and to focus on improving gains in energy efficiencies. Even though we have alternative energy sources, we need to make sure these are managed well. We caution that most of the known conventional geothermal sources are currently near sustainable capacity or are being depleted. More research needs to go into finding and developing ways to utilise new geothermal resources such as GNS's Geothermal Next Generation.  |
| Phasing out fossil gas while maintaining consu   | mer wellbeing and security of supply  |
| 61. What are your views on the outcomes,<br>scope, measures to manage distributional<br>impacts, timeframes and approach that<br>should be considered to develop a plan<br>for managing the phase out of fossil gas? | We acknowledge that there is a need to provide for rapidly use existing technologies that can be brought online quickly in times of high demand. Currently, Huntly meets that need, however, <u>we submit that another option will need to be established.</u> We caution that, in the current New Zealand context, geothermal, wind or solar might have challenges to meet such demand. Wind and solar are weather-dependent and have a very low load factor. Geothermal is very reliable but the thermal components of geothermal power stations cannot be turned on and off at will, because of the complications involved in co-ordinating the extraction of pressurised high-temperature fluid from multiple wells at depths of up to several kilometres, the piping of that fluid several kilometres to the   |

<sup>&</sup>lt;sup>13</sup> <u>https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/coal-statistics/</u>

|  | <ul> <li>power station, the smooth running of the power station, pipes and well at a stable temperature, and the discharge of the fluid by reinjection. Generally, a geothermal power station has one 3-day outage a year for maintenance. The infrequency of station outage is both a testament to geothermal electricity generation's stability, and to the technical difficulties of managing such an outage.</li> <li>We query why distributional impacts have not been explicitly covered in the discussion document.</li> <li>We suggest that a mini grid system, based on the Canadian district energy systems<sup>14</sup>, could be applied to small communities, and that modularity and community size should be considered to manage distributional impacts. These systems also allow for diversification based on access that communities have to different energy sources. We acknowledge that this option has been briefly considered, however there is a need for more discussion on the approach and a move away from regional grid system</li> </ul> |
|--|--|
|  | We submit that it should be made explicit as to when local government should have regard to the emissions  |
|  | reduction plan when processing consents. It should be made clear and unambiguous when we need to give way to the provisions of the plan.   |
| Decarbonising the industry sector  |  |
| 62. How can work under way to decarbonise<br>the industrial sector be brought together,<br>and how would this make it easier to<br>meet emissions budgets and ensure an<br>equitable transition? | <u>We recommend prioritising support/facilitation in those areas where the phasing out of fossil fuels more</u><br><u>negatively affects communities.</u> For example, in areas where a community relies on fossil fuels for their economy<br>there should be a concentration of incentives, greener houses, and an economy stimulated in other ways. These<br>initiatives could be driven by regional development agencies such as Te Waka in the Waikato, or Ara Ake in<br>Taranaki <sup>15</sup> .  |
|  | We suggest further investigation is needed to determine the value of ground-source heat pumps (GSHPs) as we move to a denser urban environment. This could draw from overseas research on the performance GSHPs in Canada <sup>16</sup> and case studies from GNS Science, Te Pū Ao <sup>17</sup> . We consider these systems could be used in the cooling and heating of commercial buildings.  |

<sup>&</sup>lt;sup>14</sup> https://www.toolkit.bc.ca/tool/district-energy-systems

 <sup>&</sup>lt;sup>15</sup> https://araake.co.nz
 <sup>16</sup> Mohamed R.H. Abdel-Salam; Aqeel Zaidi; and Matt Cable (2021). Field study of heating performance of three ground-source heat pumps in Canadian single-family houses. https://doi.org/10.1016/j.enbuild.2021.110959
 <sup>17</sup> https://www.gns.cri.nz/Home/Learning/Science-Topics/Earth-Energy/Case-Studies

|     |   | Other alternatives include the use of low-temperature geothermal energy. We note these systems appear to make little economic sense for home heating in the current New Zealand context, given our relatively low electricity costs, mild climate, and low housing density. However, we note that can be suitable for larger buildings as demonstrated at Christchurch Airport and other sites <sup>18</sup> .<br>We caution that there may be cases in the decarbonisation of the industrial sector, such as if someone were to use biomass from the felling of trees for fuel, where consequential issues are faced in accounting of the ETS. We submit that the ETS may need further refining to address this and help prevent emissions leakage through           |
|-----|---|---|
|     |   | decarbonisation opportunities.  |
| 63. | Are there any issues, challenges and<br>opportunities for decarbonising the<br>industrial sector that the Government<br>should consider, that are not covered by<br>existing work or the Commission's<br>recommendations?                                 | We caution that a reliance on the use of biomass for energy is not necessarily the solution to contributing to reducing emissions unless it is through utilising an existing waste stream.<br><u>Council also suggests controlling emissions of short-lived particulate and gas emissions that have a significant impact on climate change and localised health impacts</u> . Black carbon, a major component of PM2.5, generated from combustion of fossil fuels and biomass needs to be considered, as these are known to be a significant contributor to global warming and have a significant impact on human health due to localised impacts on air quality. Similarly, we recommend undertaking further research to account for combustion gases such as carbon |
|     |   | monoxide and nitrogen oxides – precursors to ozone formation, a greenhouse gas. Attempts to reduce carbon monoxide and nitrogen oxides will also have a beneficial impact on climate change and human health  |
| Add | dressing current data gaps on New Zealand'  | s energy use and associated emissions through an Energy and Emissions Reporting scheme  |
| 64. | In your view, should the definition of a<br>large energy user for the purposes of the<br>proposed Energy and Emissions Reporting<br>scheme include commercial and transport<br>companies that meet a specified<br>threshold?                              | We support the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold.         We recommend that the Government considers how to treat conglomerates of small groups that together have high emissions that meet the threshold.  |
| 65. | We have identified a proposed threshold<br>of 1 kt CO <sub>2</sub> e for large stationary energy<br>users including commercial entities. In<br>your view, is this proposed threshold<br>reasonable and aligned with the<br>Government's intention to meet | No response   |

<sup>&</sup>lt;sup>18</sup> <u>https://www.gns.cri.nz/content/download/12059/64258/file/Space%20heating%20-%20Christchurch%20airport.pdf</u>

|  | emissions budgets and ensure an equitable transition?  |  |
|--|--|--|
| 66.  | In your view, what is an appropriate<br>threshold for other large energy users<br>such as transport companies?   | No response  |
| 67.  | Are there other issues, challenges or<br>opportunities arising from including<br>commercial and transport companies in<br>the definition of large energy users for<br>the purposes of the proposed Energy and<br>Emissions Reporting scheme that the<br>Government should consider? Supporting<br>evidence on fleet size and characteristics<br>is welcomed. | <ul> <li>We support including commercial and transport companies. Availability of more consistent data will facilitate identifying opportunities to reduce transport emissions.</li> <li>We highlight the need gather more data to understand how emissions reduction targets will affect supply chains and its impact on consumer goods prices.</li> <li>Emissions data will require systems to ensure consistency and quality of the information, which will need to be factor into accounting for companies. We recommend that it is crucial that there be thought put into securing availability of qualified professionals to do emissions accounting.</li> </ul>   |
| Su   | Supporting development and use of low-emissions fuels  |  |
| 68.  | What level of support could, or should<br>Government provide for development of<br>low-emissions fuels, including bioenergy<br>and hydrogen resources, to support<br>decarbonisation of industrial heat,<br>electricity and transport?   | We submit that Government should offer the highest level of support practicable. This should include funding for research and development, incentivising research, and removing barriers, and also partnering with energy companies to plan the distribution networks and charging networks for electric vehicles (including hydrogen and pure electric vehicles).   |
| Are there any other views you wish to share in relation to energy? |  | We support the proposals from the Sustainable Biofuels Mandate. We consider it necessary to require certificationof lifecycle emissions of biofuels sold in New Zealand using international standards on the basis that it is robustand more cost efficient.We also support producers using a system consistent with other international markets.It is important thatdecision-making around the types of biofuels that are introduced should consider, in addition to the lifecycle GHGemissions, the emissions of hazardous air pollutants. Some types of biodiesels have been found to produce morehazardous air pollutants than petrol or diesel. For example, a recent study <sup>19</sup> , assessed the toxicity of particles fromthe combustion of different types of biodiesels. The study found that particles produced from combustion of dieselmanufactured from rapeseed oil methyl ester were less inflammatory than fossil diesel but soybean oil methyl |

<sup>&</sup>lt;sup>19</sup> Daniel Southern; Paul Hellier; Midhat Talibia; Martin O. Leonard; and Nicos Ladommatosa (2021). Re-assessing the toxicity of particles from biodiesel combustion: A quantitative analysis of *in vitro* studies. <u>https://doi.org/10.1016/j.atmosenv.2021.118570</u>

|     |   | ester particles were more inflammatory. Waste cooking oil methyl ester was found to increase particle cytotoxicity<br>whereas palm oil methyl ester decreased particle cytotoxicity. It was also found that particle-phase PAH emissions<br>also followed this trend.<br>We recommend that any decisions on biofuels need to carefully account for any GHG tailpipe emissions, as some<br>studies tend to indicate that in most cases, biodiesels can produce more NOx emissions than diesel <sup>20</sup>  |
|-----|---|---|
| Bui | Iding and construction  | studies tend to indicate that in most cases, biodiesels can produce more nov emissions than dieser .  |
| 69. | The Commission recommended the  | We support mandating energy performance standards to set a baseline and improve energy efficiency of  |
|     | Government improve the energy<br>efficiency of buildings by introducing<br>mandatory participation in energy                      | <u>commercial and public buildings.</u> We suggest that in the medium term this should be extended to residential buildings.  |
|     | performance programmes for existing<br>commercial and public buildings. What<br>are your views on this?                           | We support introducing policies to limit emissions from fossil fuel combustion to operate buildings (e.g., for space<br>and water heating). However, we note that this should use all available policy levers to accomplish the emissions<br>reductions target via financial incentives (ETS) and other regulatory mechanisms. We suggest that the mix of<br>regulatory levers should be regularly reviewed to ensure that it is as fair and equitable as possible (a just and fair<br>transition). For transitions (existing buildings), the system has to account for the ability of certain sectors of the<br>population to afford less fossil fuel use intensive methods to heat spaces, for example. |
| 70. | What could the Government do to help  | We suggest introducing requirements for Services Efficiency performance (as outlined in the Building for Climate  |
|     | the building and construction sector<br>reduce emissions from other sectors,<br>such as energy, industry, transport and<br>waste? | <u>Change programme) to support increased operational efficiency of buildings</u> . However, it is important to manage technological changes. Technology moves at a faster pace than regulatory changes, thus potentially locking people into an old system. We suggest actively managing performance standards and reviewing them regularly.   |
|     |   | The framework to Transform Operational Efficiency would benefit from considering the following: <ul> <li>Including electrical appliance efficiency for built-in systems.</li> </ul>   |
|     |   | <ul> <li>Including on-site collection and storage of water, particularly collection of rainwater, as it reduces<br/>emissions from water treatment and reticulation for uses that do not require such a high water quality<br/>standard, e.g. flushing toilets.</li> </ul>  |
|     |   | <ul> <li>Developing mechanisms to incentivise carbon accounting as part of the construction process, aiming to embed in regulatory requirements. This could include having reuse and recycle inventories that would allow them work as offsets for emissions in other stages of the building process, much like IRD has an oversight over the accounting done for the financial aspects of the construction project.</li> </ul>   |

<sup>&</sup>lt;sup>20</sup> Hao Chen; Bin Xie; Jinqiu Ma; and Yisong Chen (2018). NOx emission of biodiesel compared to diesel: Higher or lower? <u>https://doi.org/10.1016/j.applthermaleng.2018.04.022</u>

|     |  | - Accounting for emissions related to the increase of impermeable surfaces linked to the building, like                |
|-----|--|--|
|     |  | driveways, access paths, etc.  |
| 71. | The Building for Climate Change              | We support introducing reporting requirements for whole-of-life embodied carbon in buildings, followed by a cap        |
|     | programme proposes capping the total         | on whole-of-life embodied carbon for buildings. Further, we note that reporting and capping should also apply to       |
|     | emissions from buildings. The caps are       | refurbishment and demolition project, as this may provide opportunities for further recycling of material and          |
|     | anticipated to reduce demand for fossil      | efficient use of waste.  |
|     | fuels over time, while allowing flexibility  |  |
|     | and time for the possibility of low-         | We consider that phasing out of fossil gas connections should be done through a declining cap aligned with             |
|     | emissions alternatives. Subsequently, the    | national emissions budgets and related reductions. We also support setting a date to end new fossil gas                |
|     | Commission recommended the                   | connections in all buildings. However, we consider that science, feasibility, and legislative targes should be used    |
|     | Government set a date to end the             | to determine any phase out dates. This can be facilitated by the government supporting people, communities, and        |
|     | expansion of fossil gas pipeline             | businesses to reduce demand for fossil fuels in buildings by investing in and encouraging use of readily abundant      |
|     | infrastructure (recommendation 20.8a).       | cheap clean energy sources like wind and solar (and battery).  |
|     | What are your views on setting a date to     |  |
|     | end new fossil gas connections in all        |  |
|     | buildings (for example, by 2025) and for     |  |
|     | eliminating fossil gas in all buildings (for |  |
|     | example, by 2050)? How could                 |  |
|     | Government best support                      |  |
|     | people, communities and businesses to        |  |
|     | reduce demand for fossil fuels in            |  |
|     | buildings?                                   |  |
| 72. | The Government is developing options for     | We support the use of differentiated carbon calculation tools for small (simplified) and large buildings (more         |
|     | reducing fossil fuel use in industry, as     | detailed). We agree that detailed embodied carbon calculation is appropriate for larger buildings, given the scale     |
|     | outlined in the Energy and industry          | of the projects and the implications these have in the industry and energy sectors. The best way to address the        |
|     | section. What are your views on the best     | use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial  |
|     | way to address the use of fossil fuels (for  | buildings is again to rapidly invest in and encourage super abundant affordable clean energy from wind solar and       |
|     | example, coal, fossil gas and LPG) in        | battery  |
|     | boilers used for space and water heating     |  |
|     | in commercial buildings?                     |  |
| 73. | Do you believe that the Government's         | We <b>note</b> that the changes aimed at introducing like energy efficiency standards, thermal performance will mainly |
|     | policies and proposed actions to reduce      | affect district councils' activities as Building Consenting Authorities, which would create additional work to ensure  |
|     | building-related emissions will adversely    | compliance with newly introduced consenting processes when deciding applications.                                      |
|     | affect any particular people or groups? If   |  |
| so, what actions or policies could help reduce any adverse impacts?  | We <b>recommend</b> introducing guidance and regulations to ensure the system has the right tools for policy implementation, to be promoted consistently so that consent authorities approach an application similarly at different levels.   |
|--|---|
|  | <ul> <li>In general, we submit that the system should be designed to minimise adverse impacts. This could be achieved by:</li> <li>Providing clear directions, an unambiguous building code and enforceable regulations.</li> <li>Having financial recognition of sequestered carbon, via a potential incorporation into the ETS. E.g., engineered timber; provides better seismic resilience and keeps carbon sequestered.</li> <li>Ensuring that the changes are translated into lower operational costs for buildings.</li> <li>Rewarding improved health outcomes.</li> </ul> |
|  | We also note that as result of the health response to the COVID-19 pandemic, people in New Zealand have become more aware of the need to have more energy efficient buildings, since we are working and studying more from home.  |
| 74. How could the Government ensure the<br>needs and aspirations of Māori and iwi<br>are effectively<br>recognised, understood and considered<br>within the Building for Climate Change<br>programme?  | No response.  |
| 75. Do you support the proposed behaviour<br>change activity focusing on two key<br>groups: consumers and industry<br>(including building product producers and<br>building sector tradespeople)? What<br>should the Government take into<br>account when seeking to raise awareness<br>of low-emissions buildings in these<br>groups? | No response   |
| <ul> <li>76. Are there any key areas in the building<br/>and construction sector where you think<br/>that a contestable fund could help drive<br/>low-emissions innovation and encourage,<br/>or amplify, emissions reduction</li> </ul>   | Funding transition for existing buildings and building enough flexibility in the policy framework to incorporate new technologies is supported. As we noted in question 71, technology moves faster than building regulation.   |

| opportunities? Examples<br>building design, product i<br>building methodologies o  | could include<br>nnovation,<br>or other?   |  |
|--|--|--|
| 77. The Ministry of Business,<br>Employment (MBIE) is co-<br>range of initiatives and in<br>reduce construction wast<br>reuse, repurposing and re<br>materials. Are there any o<br>specified in this documen<br>believe should be consider | Innovation and F<br>nsidering a<br>centives to<br>e and increase<br>ecycling of<br>options not<br>at that you<br>ered? | Please refer to our comments on "waste" and "circular economy" sections. |
| 78. What should the Governar<br>account in exploring how<br>low-emissions buildings a<br>(including reducing embo<br>such as through financial<br>incentives?  | ment take into<br>to encourage<br>and retrofits<br>idied emissions),<br>and other                                      | Please refer to our response for question 76.                            |
| 79. What should the Governm<br>account in seeking to coo<br>support workforce transfi<br>ensure the sector has the<br>at the right time?   | ment take into F<br>ordinate and<br>ormation, to<br>e right workforce  | Please refer to our comments on the "helping sectors adapt" section.     |
| 80. Our future vision for Aote<br>place where all New Zeals<br>warm, dry, safe and dura<br>in. How can we ensure th<br>Zealanders benefit from i<br>thermal performance star<br>buildings?   | earoa includes a F<br>anders have a<br>ble home to live<br>at all New<br>mproved<br>ndards for our                     | Please refer to our response for question 73                             |
| 81. Are there any other views<br>share on the role of the b<br>construction sector in the<br>reduction plan?   | s you wish to<br>puilding and<br>e first emissions   | No further comments.   |
| Agriculture  |  |  |

| 82. | How could the Government better<br>support and target farm advisory and<br>extension services to support farmers and<br>growers to reduce their emissions?                              | We <b>suggest</b> that existing tools and methods should be utilised. For instance, farmers could be encouraged to undertake emissions reduction work under their Farm Management Plans. This will require assistance from the Government through contestable funds and free advice. We <b>raise concern</b> that currently integrating all of the <u>decision-making tools available is an issue</u> . There are currently at least four emissions calculators for rural systems and this can be both overwhelming and create confusion for both farmers and professionals.                                |
|-----|---|---|
|     |   | We <b>caution</b> that emissions from the rural sector are influenced by legislation that predetermines spatial planning decisions, as is the case under the Drainage Act 1908 provisions that enable the draining of peat soils. Draining of peat for farming increases carbon and methane emissions. There are many complexities that must be taken account of and advisory and extension services must be aware that a blanket approach will not work.   |
| 83. | How could the Government support the specific needs of Māori-collective land owners?  | We <b>suggest</b> that the Government works with The Office Of The Māori Trustee, Te Tumu Paeroa to identify the activities of diverse Māori collective landowners in order to establish what to support them in.   |
|     |   | are and what their land use categories are.   |
| 84. | What could the Government do to<br>encourage uptake of on-farm mitigation<br>practices, ahead of implementing a<br>pricing mechanism for agricultural<br>emissions?                     | We <b>recommend</b> that the Government works to understand what consultants can do to help and guide, to understand what rural communities and landowners would be benefit from, and what strategies will help people come to positive decisions.  |
| 85. | What research and development on mitigations should Government and the sector be supporting?  | We <b>suggest</b> this should include research around possible mitigations that could be put on peat soils, with an objective to propose plausible and pragmatic solutions, rather than suggesting banning farming on peat. We need solutions that are focussed across environmental, social, and economic outcomes.  |
| 86. | How could the Government help industry<br>and Māori agribusinesses show their<br>environmental credentials for low-<br>emissions food and fibre products to<br>international customers? | No response   |
| 87. | How could the Government help reduce<br>barriers to changing land use to lower<br>emissions farming systems and products?<br>What tools and information would be                        | We <b>submit</b> that it should be made feasible for an 'average' person to sign up for the ETS to encourage the shifting of land to carbon farming as a revenue source. We observe that it is currently complex to pass the 'red tape' and farmers therefore do not sign up for carbon credits. There could potentially be a significant area of land that is already sequestering carbon but not being measured or accounted for. We <b>suggest</b> that a step-by-step process that facilitates farmers to enter their land use/activity details would be beneficial. Further, we <b>suggest</b> that by |

|     | most useful to support decision-making<br>on land use?  | giving rural professionals comprehensive training concerning the ETS, they will be able to themselves support farmers to get on board with the system.   |
|-----|---|--|
| 88. | Are there any other views you wish to share in relation to agriculture?   | As we have highlighted in previous submissions, farming has contributed much to our region, and to the country.<br>Any means by which the government can support and assist rural land users to understand and contribute to<br>emissions reductions is vital. The vitality of our rural communities, and the small rural towns that support these<br>communities, must be a consideration in any measures implemented. Unintended consequences on community<br>and social cohesion must be considered when developing an emissions reduction approach.  |
| Wa  | ste   |  |
| 89. | The Commission's recommended<br>emissions reduction target for the waste  | We support the target to reduce waste biogenic methane emissions by 40 per cent by 2035, provided there is adequate legislation, investment and funding targeted to support a transition to a circular economy and prevent   |
|     | sector significantly increased in its final<br>advice. Do you support the target to<br>reduce waste biogenic methane<br>emissions by 40 per cent by 2035? | waste. Overall, this target could be aided by a shift to reusable systems and designing out waste rather than focusing on processing for cardboard, paper and timber.  |
| 90. | Do you support more funding for<br>education and behaviour change<br>initiatives to help households,<br>communities and businesses reduce their           | We support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste, but priority needs to be on legislation that makes these actions easier or incentivised, such as banning organics from landfill, funding local community operated composting, putting reusability into legislation and mandating source separation.  |
|     | organic waste (for example, food,<br>cardboard, timber)?  | We suggest that part of the education available should be with tertiary providers who can offer training and skills pathways to work in a low carbon, circular economy.  |
| 91. | What other policies would support<br>households, communities and businesses<br>to manage the impacts of higher waste<br>disposal costs?                   | We consider that additional policies and accompanying funding would support meeting emissions reduction as<br>well as waste targets set out in the proposed waste strategy (also out for consultation).We submit that waste levy funding and other government investment should be made available for both capital<br>and operational costs to enable local organics diversion services. We have observed that while ratepayers support<br>an expansion of local authority service to include kerbside organics, they will not go as far to pay for the service<br>out of rates. For example, ratepayers voted not to increase rates for kerbside food scraps in Raglan. A kerbside<br>food scraps service is also more expensive in rural areas, meaning ratepayers in these areas have a more expensive<br>service to agree to. For example, a weekly food scraps service in the Ōtorohanga urban centre would be a rate<br>increase of \$78.90 and Kāwhia would be \$180.60. Services that support the low carbon, zero waste, circular<br>economy future need to be subsidised to ensure these services are the standard across the country. |

|     |  | We <b>recommend</b> that if organics are banned from landfill and councils are providing organics kerbside service (or similar) there also needs to be standards to ensure quality of compost is maintained and that when this compost returns to the soil it is of benefit. We know there is an issue with plastics, PFAS and broadleaf herbicides in kerbside food scraps compost and are developing a research project to identify mitigation for these.   |
|-----|--|---|
| 92. | Would you support a proposal to ban the<br>disposal of food, green and paper waste<br>at landfills for all households and<br>businesses by 1 January 2030, if there<br>were alternative ways to recycle this<br>waste instead? | We <b>support</b> a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead, provided there is consideration to how the services are supported as outlined in Question 91. Services need to be equitable and available across the country in both urban and rural settings. Community needs to be empowered to take advantage of the opportunity of locally based composting which contribute to resilience. For example, food waste kerbside has continued in Raglan during lockdown levels 4 and 3. Other food scraps services in the Waikato Region were suspended and organics sent to landfill until level 2 or higher. |
| 93. | Would you support a proposal to ban all<br>organic materials going to landfills that<br>are unsuitable for capturing methane<br>gas?   | We <b>support</b> a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas,<br>provided there is consideration to how the services are supported as outlined in Question 91. Services need to be<br>equitable and available across the country in both urban and rural settings. Community needs to be empowered<br>to take advantage of the opportunity of locally based composting which contribute to resilience. For example, food<br>waste kerbside has continued in Raglan during lockdown levels 4 and 3. Other food scraps services in the Waikato<br>Region were suspended and organics sent to landfill until level 2 or higher.  |
| 94. | Do you support a potential requirement<br>to install landfill gas (LFG) capture<br>systems at landfill sites that are suitable?  | We <b>support</b> a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable.  |
| 95. | Would you support a more standardised<br>approach to collection systems for<br>households and<br>businesses, which prioritises separating<br>recyclables such as fibre (paper and<br>cardboard) and food and garden waste?     | We highlight that source separation of waste, recycling and organics increases the quality of the processed material. <u>While collection could be standardised to require source separation, we <b>suggest</b> processing could either <u>occur at the local, regional or national level</u>. For example, it may be more appropriate for dense urban populations to bulk organics and send to a larger processing facility while smaller rural populations may be better served by local processing.</u>  |
| 96. | Do you think transfer stations should be<br>required to separate and recycle<br>materials, rather than sending them to<br>landfill?  | We consider that transfer stations should be required to separate and recycle materials, rather than sending them to landfill.  |

| 97. Do you think that the proposals outlined<br>in this document should also extend to<br>farm dumps?  | We consider that the proposals outlined in this document should also extend to farm dumps. <u>However, we suggest</u> that rural services need to be expanded to offer alternatives that are actually usable, in addition to product stewardship.  |
|--|--|
| 98. Do you have any alternative ideas on how<br>we can manage emissions from farm<br>dumps, and waste production on farms?   | Burning and burying are banned as part of Hamilton and Wāipa's territorial authorities' Bylaw. <u>We submit that</u><br><u>Regional Plans should align with banning burning and burying.</u> <u>To accompany this, we recommend that the low</u><br><u>value products that are being disposed of on farm need to be designed out the system, applied with product</u><br><u>stewardship schemes and require the businesses who produce the products to have responsibility for what they</u><br>generate.  |
| 99. What other options could significantly<br>reduce landfill waste emissions across<br>Aotearoa?  | We recommend that the waste levy should be increased to \$140/tonne to match international best practice and incentivise designing waste out of the system and, in conjunction, local authorities should be enabled to issue spot fines for illegal waste management rather than going through the court process.         We recommend that reuse systems should be prioritised in the first instance.       Recycling systems should be established with the view that certain materials, such as plastic, degrade over time and should be reduced. On shore recycling systems should ensure that feedstock does not incentivise feedstock production. Materials that downcycle over the course of their life should go down in volume over the life of the new waste strategy rather than be incentivised. |
| F-gases  |  |
| 100.Do you think it would be possible to<br>phase down the bulk import<br>of hydrofluorocarbons (HFCs) more<br>quickly than under the existing Kigali<br>Amendment timetable, or not?    | We support a more ambitious target than the one agreed to under the Kigali Amendment, as long as there is evidence that suitable technological replacements are available, and these are safe and affordable.  |
| 101.One proposal is to extend the import<br>phase down to finished products<br>containing high-global warming potential<br>HFCs. What impact would this have on<br>you or your business? | No impact on our statutory role  |
| 102.What are your views on restricting the<br>import or sale of finished products that<br>contain high-global warming potential<br>HFCs, where alternatives are available?               | We support restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available, so long as alternatives are safe and affordable.   |
| 103.What are your views on utilising<br>lower global warming potential   | We support utilising lower global warming potential refrigerants in servicing existing equipment, so long as alternatives are safe and affordable.   |

| refrigerants in servicing existing equipment?   | We suggest that any alternatives should be assessed beyond their global warming potential. Any alternative should be considered based on its risk to people and the environment and restrictions on the use of substances that can be harmful if not disposed of properly.   |
|---|--|
| 104.Do you have any thoughts on alternatives<br>to HFC refrigerants Aotearoa should<br>utilise (eg, hydrofluoroolefins or natural<br>refrigerants)?   | We support alternatives to HFC refrigerants, so long as they are safe and affordable, and the adverse outcomes of utilising alternatives (such as adverse soil quality from discharging to soils) do not outweigh the benefits.         We suggest considering the use of GSHPs for cooling in residential and commercial settings. Please refer to our comments on question 62.         We also recommend assessing the whole of life cycle emission of any alternatives to F-gases.         Health and safety should also be factored in the use of different technologies for either residential or commercial settings. For example, the use of ammonia. We understand Fonterra uses it in some of its plants. Uses beyond those already known should be carefully considered to reduce the risk to human health and avoid adverse |
| 105.Can you suggest ways to reduce<br>refrigerant emissions, in combination<br>with other aspects of heating and cooling<br>design, such as energy efficiency and<br>building design?                           | No additional comments.  |
| Forestry  |  |
| 106.Do you think we should look to forestry to<br>provide a buffer in case other sectors of<br>the economy under-deliver reductions, or<br>to increase the ambition of our future<br>international commitments? | We caution that the disconnect between the market price of carbon and cost of forestry land is currently observed to result in the purchasing of carbon credits in preference to afforestation for sequestering emissions.         We support advice presented in the Climate Change Commission's 2021 Draft Advice for Consultation, that promoted new permanent native forests for the purpose of offsetting remaining long-lived gas emissions in sectors with limited opportunities to reduce emissions. This due to their ability to absorb carbon more slowly and continue to do so for centuries.   |
| 107.What do you think the Government could<br>do to support new employment and<br>enable employment transitions in rural<br>communities affected by land-use change<br>into forestry?                           | Similar to the approaches outlined in our responses to questions 14 and 17 concerning industries affected by the phase out of technologies, we suggest that offering support for retraining and capitalising the opportunities will be key.  |

|  | We caution that currently the log processing industry is not stable, and it will need to be considered how it can be      |
|--|---|
|  | made more sustainable before significant employment transitions progress. This will include considering how to            |
|  | best mitigate adverse downstream effects.   |
| 108.What's needed to make it more          | We recommend helping people to understand how they can use colonising native species (such as manuka) as a                |
| economically viable to establish and       | cost-effective initial step to establishing native forest.  |
| maintain native forest through planting or |   |
| regeneration on private land?              |   |
| 109.What kinds of forests and forestry     | We support economically viable options that prevent exposed soil. Such options work to both protect the soils and         |
| systems, for example long-rotation         | achieve co-benefits for water quality.  |
| alternative exotic species, continuous     |   |
| canopy harvest, exotic to native           | Council supports encouraging transitioning exotic forests to native, however, we note this should be accompanied          |
| transition, should the Government          | by a requirement on foresters to deliver on an agreed outcome regarding this. Currently, many investors are paying        |
| encourage and why?                         | a premium on the expectation they will own a native forest in time, however current settings provide no guarantee         |
| a. Do you think limits are needed, for     | the forest manager will deliver.  |
| example, on different permanent            |   |
| exotic forest systems, and their           | <u>Council recommends</u> developing mechanisms such as a levy applied to large scale carbon foresters to fund            |
| location or management? Why or             | research on exotic to native transition, along with covenants or contractual tools to ensure active management of         |
| why not?                                   | carbon forests delivers outcomes agreed at planting. Furthermore, Council suggests developing policies that work          |
| b. What policies are needed to seize       | to require the forester to demonstrate that long term management regimes are in place, and that the                       |
| the opportunities associated with          | establishment of a particular forest is in the best interests of the specific site – in the long-term – where it is being |
| forestry while managing any                | established. This should also consider benefits and impacts on the local community.                                       |
| negative impacts?                          |   |
|  | We encourage undertaking further research to understand the effects of permanently planting exotic species on             |
|  | marginal land.  |
| 110.If we used more wood and wood residues | We <b>suggest</b> that it is more carbon neutral to use wood residues than whole trees when making pellets. In the latter |
| from our forests to replace high emitting  | case, it is only carbon neutral once a tree has grown and reached maturity, decades later.                                |
| products and energy sources, would you     |   |
| support more afforestation? Why or why     |   |
| NOL?                                       | We submit that spatial planning table should design to the group must suitable for offerentiation and enable              |
| releved by                                 | we submit that spatial planning tools should designate the areas most suitable for anorestation and enable,               |
| played by:                                 | inrough zohing, the development of industrial areas that will service the activity and transport routes. The role         |
| a. central and local governments in        | played by Central and Local Governments should be more significant due to their responsibilities to consider all          |
| influencing the location and scale of      | aspects of community wellbeing and the more regulated transparency of the outcomes they are driven by.                    |
| afforestation through policies such        |   |

| as the resource management<br>system, ETS and investment?<br>b. the private sector in influencing the<br>location and scale of afforestation?     | Government should work with the private sector to make sure their operations align with the bigger goal of the Emissions Reduction Plan.   |
|---|--|
| 112.Pests are a risk to carbon sequestration<br>and storage in new, regenerating and<br>existing forest. How could the<br>Government support pest | We <b>submit</b> that an increased level of ungulate and introduced herbivore control, combined with cattle and ungulate fencing, is needed. Considering findings and conclusions of: Wild Animal Control for Emissions Management (WACEM) research synthesis <sup>21</sup> , Management alternatives for promoting carbon sequestration in pre-1990 natural forests <sup>22</sup> , and Protecting Our Natural Ecosystems' Carbon Sinks <sup>23</sup> . |
|   | We <b>consider</b> the abovementioned herbivore control could be achieved by directing more effort and funding at controlling pest animals consuming large volumes of biomass in our forests and thereby reducing a forest's ability to sequester carbon <sup>24</sup> . We <b>submit</b> that central government works with local authorities to identify priority areas and pests.   |
|   | We <b>recommend</b> that the Government should lead development of national pest management plans and support<br>them with appropriate funding. These plans should recognise the mobile nature of pests (cross boundary<br>issues) and address the funding of community efforts for pest eradication (pest plants specifically).   |
| 113.From an iwi/Māori perspective, which<br>issues and potential policies are a priority<br>and why, and is anything critical<br>missing?         | No response.   |
| 114.Are there any other views you wish to share in relation to forestry?  | We <b>suggest</b> that New Zealand needs to stop exporting so many raw logs overseas and focus more on exporting finished timber products overseas. This would improve our carbon footprint significantly while also reducing our need for use of fumigants at ports like methyl bromide, which contributes to ozone depletion as well as being a greenhouse gas.  |

<sup>&</sup>lt;sup>21</sup> <u>https://www.doc.govt.nz/globalassets/documents/conservation/threats-and-impacts/animal-pests/wild-animal-control-emissions-management.pdf</u>

<sup>&</sup>lt;sup>22</sup> https://www.mpi.govt.nz/dmsdocument/47974-Management-alternatives-for-promoting-carbon-sequestration-in-pre-1990-natural-forests

<sup>&</sup>lt;sup>23</sup> <u>https://www.forestandbird.org.nz/sites/default/files/2021-06/Protecting%20our%20natural%20ecosystems%27%20carbon%20sinks%20-%20Forest%20%26%20Bird%20report.pdf</u>

<sup>&</sup>lt;sup>24</sup> <u>https://www.forestandbird.org.nz/resources/maps-reveal-nations-forests-under-attack-wild-deer-pigs-and-goats</u>



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23 November 2021

Ministry for the Environment PO Box 10362 Wellington 6143 Attention: climate consultation 21

Email: climateconsultation21@mfe.govt.nz

### **Digitally Delivered**

Dear Sir / Madam,

#### SUBMISSION ON MfE's EMISSIONS REDUCTION PLAN DISCUSSION DOCUMENT

Waipa District Council appreciates the opportunity to comment on the discussion document on the MfE's Emissions Reduction Plan. The submission was considered at a Council Committee workshop on 16 November 2021.

You are welcome to make contact with Waipa District Council with regards to any of the points made in our submission. In this regard and in the first instance can be contacted either via email at

Yours sincerely



Garry Dyet CHIEF EXECUTIVE

Attachment: Waipa District Council Submission on the MfE's Emissions Reduction Plan Discussion Document

## Submission on the MfE Emissions Reduction Plan discussion document

By: Waipā District Council Submission deadline: 24 November 2021

### Introduction

Waipā is a landlocked territorial district in the Waikato Region, south of Hamilton. It has a population of approximately 57,000 principally in the towns of Cambridge and Te Awamutu, but with a significant rural population. Waipā is a high-growth district with strong commuter links with Hamilton. Reticulated drinking water is sourced mainly from the Waikato River; most rural properties rely on rainfall capture for drinking water. Dairy farming is the largest sector of the Waipā economy, contributing \$267million in 2020, equating to 9.2% of the district's economy.

Although not directly affected by coastal issues arising from climate change, Waipā can expect to be environmentally, socially and economically challenged by the effects of climate change. It is Waipā District Council's responsibility to manage its services and assets in ways that help individuals and communities adapt to meet these challenges.

In developing its 2021-2031 Long Term Plan (LTP), the Council engaged with its communities to develop a new vision to *Build Connected Communities*. Pertinent to the climate change challenges faced by Council, our Community Outcomes are to be:

- be environmental champions,
- be socially resilient,
- be economically progressive.

Among our external strategic priorities, our focus is to:

- effectively plan and provide for growing communities, and
- prepare for climate change.

The principal community concerns for the environment, as expressed to Council, are:

- being prepared for, and responsive to, climate change,
- the promotion of sustainable living, and
- a desire to improve waste recycling and waste minimisation.

Council's responses in this submission are confined to questions where it feels it can provide constructive input. They include input from senior managers, staff, Council's Executive and have been discussed with Elected Members to reflect Council's approach to this subject.

### General remarks

In general Council supports the approach of the Ministry in its proposals for the first Emissions Reduction Plan. However, Council urges the Ministry, and the whole of central government, to be bolder and more ambitious. Meeting the emissions budgets to 2035 recommended by the Climate Change Commission is essential, for if these are not met, the global circumstances in the early 2030s may be such that even more ambitious reductions will be required by a date earlier than 2050 if global temperature increases are to be confined within 1.5°C above pre-industrial levels. In these circumstances, larger and swifter emissions reductions would increase the risk of unfair, inequitable and exclusive transition pathways occurring as more disadvantaged households and sectors might not have the capacity to make rapid adjustments to their lifestyles or technologies in order to reduce their emissions quickly enough.

It is Council's view that the expectations of territorial authorities are not clear across any of the sectors in the discussion document. Councils are expected to take leading roles in progressing the transition pathways in their communities, but this will be difficult if there are no targets to be achieved and standardised methodologies for assessing, and reporting on, emissions reductions and other indicators.

In addition to the costs to Council of helping to drive the transition pathways, there are likely to be further financial pressures from increasing fossil fuel costs while Council undertakes the transition of its own facilities, assets and organisation.

In general Council also supports the submission of Local Government New Zealand (LGNZ) which has made several points of submission on behalf of all local authorities. The submission of this Council provides additional commentary from the Waipā perspective, and where there is any discrepancy from the LGNZ submission, the Waipā perspective should be given precedence as it reflects the local Waipā community view rather than LGNZ's broader view.

Similarly, Council generally supports the submission of Taituarā, the local government professionals' organisation; again where there is any divergence of views, Council's own commentary reflects the local, rather than a collective, national opinion.

### Commentary on specific questions

1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not.

Council agrees with the five guiding principles but would like to see the following points included:

- A recognition of the multi-ethnic and multi-cultural communities in New Zealand that will be affected by climate change and who need to be included in a fair, equitable and inclusive transition; specifically Pacific Island communities should be acknowledged as New Zealand may be a major destination for many as island nations become increasingly impacted by sea level rises.
- Reference to the Precautionary Principle of taking action in advance of evidence of harm. Whereas the principles refer to "an evidence-based approach", without the addition of the Precautionary Principle, this can be a barrier to action, or an excuse for delaying action. This has been used as a reason for taking no action on climate change issues by many people for many years. There should a balance between the need for evidence and a need for action.

Council also comments that there needs to include a principle of ensuring "joined up government directions". Councils are currently being bombarded by a plethora of government directions many of which are potentially misaligned or inconsistent (e.g. NPS for Urban Development vs NPS for Highly Productive Land vs Emissions Reduction Plan). Council suggests there needs to be an arm of government (eg. DPM or DIA) looking across all government initiatives to ensure they are all joined up and consistent in their outcomes.

## 4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

The discussion document appears to have no definition of "nature-based solutions" other than the example of regenerating native bush. Based on the premise that this is the definition intended, Council has the potential to make a considerable contribution in terms of nature-based solutions.

The Significant Natural Area (SNA) programme, Environmental Benefit Lots (EBLs) and reserve extensions/acquisitions all have potential to sequester considerable carbon especially where EBLs in Waipā are used to encourage rural tree planting. Carbon sequestration could be assessed easily using current technologies and methodologies.

Council contributes to the management of the nationally important peat lakes, several of which are located within Waipā district. The peat lake water levels are maintained artificially by weirs because surrounding peat areas are drained. As peat dries and oxidises, carbon is lost as emissions, including as methane. There may be opportunity to manage nature and carbon emissions from peat simultaneously.

Native forests as permanent carbon sinks may be a more sustainable alternative to plantation forestry on steeper properties. The lower initial rates of carbon sequestration by native forests (relative to plantation forests) are offset by there being no compounded costs such as pruning; there are reduced emissions and environmental impacts at harvest, and

provide a longer term commitment to carbon sequestration than plantation forests. The international scientific community is now strongly recommending against plantation forestry as a solution to climate change, and in favour of win-win approaches (nature-based forestry, for example) that tackle the issues of jobs and thriving communities, healthy waterways, biodiversity and climate all at once.

In New Zealand, regenerating and restoring native forests represents a huge opportunity for sequestering carbon, while creating jobs, restoring biodiversity, and protecting soils and waterways at home (compared to overseas forestry investments).

More carbon is stored in soil than living biomass. This is important in an agriculturally-rich district such as Waipā with its highly productive soils. These need to be adequately protected for their benefits in carbon sequestration, food production and security, and economic prosperity. There needs to be a balance between land use favouring pasture (and high soil carbon storage) on productive land, and land use favouring native forest replanting and regeneration (with high carbon storage, biodiversity and land drainage benefits etc) on more marginal land.

Council is also concerned at the potential loss of urban trees as a result of increasing urban density under the NPSUD. Urban trees contribute to carbon sequestration as well as urban shading and community wellbeing.

### 5. Are there any other views you wish to share in relation to the Transition Pathway?

Council acknowledges that it will have a role in transitioning to a decarbonised economy. Council provides many services for its communities that will be impacted by changes to the way they are delivered in a changing environment and in a decarbonised economy; by changes to the levels of service that can reasonably be expected; by the increasing costs of designing and maintaining infrastructure; by changes to urban design and community living in ways that will achieve sustainable social, cultural, environmental and economic wellbeing.

However, in Council's opinion, an equitable transition is vital. Even in a comparatively wealthy district such as Waipā, there are communities that are socio-economically disadvantaged and which risk being left behind if transitional services are financed on a user-pays basis, or by local authority rates. Alternative funding mechanisms need to be introduced early so that disadvantaged communities can receive the benefits of early transitions instead of having to "catch up" with their more affluent neighbours. However, although Waipā is a high-growth district, the high cost of housing can mean that even assetrich households have little disposable income for transitioning to a low emissions lifestyle.

Council requests that the document should also reference benefits to the environment other than biodiversity: there will also be benefits for environmental quality such as water and air, and thus return New Zealand to being "clean and green". It has been commented before that New Zealand society will look very different in 2050 with major transition required across many sectors. It is therefore essential to consider all sectors when envisaging how that new society might look and function. For example, while not strictly relevant to emissions reduction, the use of technology in production systems (eg. the use of genetically modified crops) may need to be reviewed as necessary for achieving economic and food security outcomes in a decarbonised society.

The public health information campaign on COVID-19 with continual advertising, announcements and literature shows that such interventions can be effective. If the transition pathway to a low emissions economy is to be successful in achieving emissions reduction targets, similar campaigns need to be devised, targeted and utilised; there needs to be a high level of understanding of why we are doing these transitions, what is proposed in terms of new technologies, what steps (small and large) everyone can do to reduce their emissions etc. Failure to do this risks creating an information void; this will make it harder and slower to achieve the required emissions reductions.

## 6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

Council considers the following actions to be the most relevant for Waipā's communities at this stage (recognising that these are likely to change over time):

- changes to transportation modes, networks and corridors will be important; however, there is a risk of increasing embedded carbon in developing alternatives or in making adaptations (eg. in developing light rail alternatives).
- building and construction changes will have an impact on individual climate resilience and wellbeing through better quality home and working environments; however, this also comes with a risk of increasing embedded carbon, and requires changes to the Waste Strategy [also currently receiving submissions] to promote and enable much greater reuse and recycling of building waste rather than disposing it into landfill sites. Council is making a submission on the Waste Strategy.
- Amendments to the NPSUD have the potential to increase emissions from demolition waste as single dwellings are removed in favour of up to three threestorey dwellings in addition to the increased embedded carbon in those new buildings.

## 7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

Waipā, and the wider lower Waikato, is an agriculturally-rich area. Changes to agriculture should not include or encourage further drainage of peat land as this causes the peat to dry and release carbon as methane, which is a major source of New Zealand carbon emissions.

Urban residential intensification has the potential to reduce some emissions (eg. from transportation), but increase emissions from demolition waste (ie. removal of one dwelling) and embedded carbon from constructing up to three three-storey replacements.

### Equitable transitions strategy

## 13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?

Council believes this is an opportunity to develop an economy in which there is full employment. Not only will some workers need new skills, but there is opportunity to upskill those who are currently outside the skill set for today's employment market. Bringing more people into employment will help achieve a fair, equitable and inclusive transition.

Council also believes that ambitious action is required. For the transition to be fair, equitable and inclusive, the pace of transition needs to accommodate those least able to make rapid change. Therefore there is a risk that progress to reducing emissions is slow. There needs to be ambition to help the "slow lane" transition quickly otherwise New Zealand will miss its emission reduction targets, or the transition will be neither fair nor equitable. This needs to commence immediately otherwise the disadvantaged sectors of the community will be constantly having to "catch up" with their more affluent and "tech-savvy" neighbours; experience tells us that such a gap will continue to widen and reduce the equity and inclusiveness of any transition. To quote Abraham Lincoln, this needs to be a transition "of the people, by the people, for the people."

# 14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission, and any other objectives that you think should be included in an Equitable Transitions Strategy?

In Council's view, there needs to be a good communications strategy that targets everyone, and particularly those communities that are less willing or able to transition; that promotes good understanding of the need for change; that can be aspirational about how society might change. People's thinking is naturally constrained by what they know and many people cannot envisage alternative technologies, ways of living etc. To enable people to transition and to respond to the challenges and be entrepreneurial, everyone needs to be able see and understand the big picture (see also Council's response to question 5 above). A series of campaigns over a sustained period of time (although not continuously otherwise their effectiveness is reduced) will certainly benefit local government in working across its communities to assist transition and resilience.

### Funding and financing

### 24. What are the main barriers or gaps that affect the flow of private capital into lowemissions investment in Aotearoa?

Council wishes to remind central government that as implementation agencies, territorial authorities have limited revenue streams. These would benefit from central government tax incentives that encourage private investment in low emissions technology and infrastructure, and also by government utilising a range of options to share revenue with local authorities.

### **Emissions pricing**

### 32. Are there any other views you wish to share in relation to emissions pricing?

In Council's view, the Emissions Trading Scheme (ETS) needs to be expanded to allow other sources of emissions savings to be claimed. For instance, wastewater treatment plants using new technology can reduce methane emissions by approximately 88% and these emissions make up a significant proportion of local authorities' carbon profiles: for Waipā, it is close to 40% of Council's total emissions. If local authorities could claim ETS credits for emissions saved through investing in new technology for wastewater treatment plants, there would be a clear win-win for both the climate and water quality/environmental outcomes.

Council would like to see other schemes that could create large-scale emissions reductions accommodated within the ETS as well, as this creates a strong incentive for both investors and users (or savers of emissions).

### Planning

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

Council supports the proposal for emissions impact assessments for consent applications. These assessments must include full material lifecycle and embodied emissions (e.g. for construction projects), not just the impact of the activity itself. This proposal will only be successful if there is clear and joined-up national direction (eg. through National Policy Statements and National Environmental Standards) to provide benchmarking and guidance for planners or anyone else undertaking the assessments with a consistent scope and methodology.

Government needs to provide councils with much greater clarity in regards to assessing the emissions impacts of resource consents, and the impact of demolishing one dwelling and replacing it with up to three others. This clarity needs to be more definite than requiring councils to "have regard to" emissions impacts, otherwise implementation will be inconsistent and not achieve the anticipated results.

It would be helpful to Local Government to have good evidence based tools to be able to compare the carbon emissions from various configurations for urban/commercial areas of different densities along with their embedded carbon. Such tools would guide planning decisions to ensure the optimal urban form in relation to reducing climate impacts.

# 34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

Council comments that central government needs to increase the revenue avenues open to councils to support and fast-track transport infrastructure. There also needs to be support for, or development of, standardised house designs that can be fast tracked through consent processes.

It should also be commented that urban intensification does not necessarily mean lower carbon emissions. Whereas it can lower transport emissions in the medium term (because this will lower anyway with an increasing decarbonised national vehicle fleet), urban intensification can lead to increased urban heating and greater demand for air conditioning. Urban intensification also leads to the loss of the shade-producing garden trees which help to combat urban heating as well promoting biodiversity and mental wellbeing.

### 35. Are there any other views you wish to share in relation to planning?

In Council's view, it is essential to coordinate the Emissions Reduction Plan with the other national directions (eg. NPSUD and NPSHPL), with the ERP setting the priority outcomes for the other directives. There needs to be a joined up, all-of-government approach to all national and planning directions which also includes councils and relevant sector representatives.

### Behaviour change

## 42. What information, tools or forums would encourage you to take greater action on climate change?

Education and information to promote behaviour change will be key to actually attain a in New Zealand culture rather than just an increase in knowledge. Where emissions are linked to very socially popular trends like fast fashion and consumeristic lifestyles, the work required to change the culture needs to be acknowledged to require a long term programme.

Establishing a nominated, and adequately financed, lead agency to drive culture and behaviour change is seen as a beneficial idea, and could potentially be extended to other government departments to assist with other initiatives (eg. in waste management).

## 43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

Most people trust people they actually know to be inspired or to copy them and make real changes. That means a diverse specialist, scientific, engagement and behaviour change workforce, so diversity is a key asset.

Face to face learning is also a trigger for ongoing behaviour change. So for example people are more likely to start worm farming after attending a course with a local educator than watching a video on line.

### Moving Aotearoa to a circular economy

## 49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

In Council's view it would be helpful to have policy settings that bring product packaging into line with what is readily recycled by the majority of councils in New Zealand. This would enable a greater proportion of waste to be recycled rather than committed to landfill.

### 51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

The current linear economy of take (from the natural environment) – make (often a single use item) – dispose (in a big hole in the ground) is not sustainable and creates a large waste burden. Waipā District Council support the circular economy approach as a key element of that is re-design and engaging the producers, manufacturers and retailers more in responsibility of the end of life of their products or packaging, where the current system leaves Councils and ratepayers trying to resolve problematic items that end up as waste.

For a circular economy to work, there needs to be equitable access to Government supported diversion infrastructure. For example currently Auckland builders can send skips to Green Gorilla which offers great diversion services and has been the recipient of several Waste Fund grants via MfE. In the Waikato we have no such access for Construction and

Demolition diversion. And transporting waste for diversion is still cost prohibitive. So please consider equitable access for all regions when developing infrastructure to support the circular economy.

### Transport

52. Do you support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

Council supports this target although conscious of the potentially inequitable impact on Waipā's rural communities which are crucial to the district economy.

53. Do you support the target to make 30 per cent of the light vehicle fleet zeroemissions vehicles by 2035, and the associated actions?

Council supports this target although the impact on farm businesses needs to be considered.

54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

Council supports this target, although alternatives will be required to reach into Waipā's furthest rural areas.

55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

Council supports this target.

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

Council supports this target. However, there needs to be emissions-free alternatives that are affordable by everyone across all urban and rural communities so that the transition remains equitable.

### 57. Are there any other views you wish to share in relation to transport?

While Council supports all of the above targets, this support is qualified by a requirement for the government to review and introduce enabling legislation and funding that is fit for achieving these outcomes. Such a review is required at an early stage in order to embed these proposals and the subsequent emissions reductions. At the moment the Local Government Act 1974 retains the current road transport legislation and traffic regulation, and this is all focused in favour of the private motor vehicle. The Speed Management Rule change has stalled in government, as has the Accessible Streets Regulation. Both of these need to be progressed and introduced quickly. There is also a lack of funding for passenger transport development which is holding back regional and local authorities from making significant changes to achieve the required passenger transport and emissions outcomes.

Council is reliant upon revenue from fuel levies for funding transport infrastructure maintenance, and is concerned that a reduction in revenue resulting from a reduction in fossil fuel use will have a negative impact on Council's ability to meet its levels of service as agreed with its urban and rural communities.

Council notes that most of the transportation targets are concerned with light vehicles. Waipā is a district with a large rural area and a significant rural economy. Therefore Council is concerned at the relative lack of consideration for farm and heavy vehicles. Electric vehicles require a significant growth in supporting infrastructure (charge stations, for example); however, without research and advances in technology for farm and heavy vehicles, and subsequent incentives from government for businesses to adopt these technologies, there is a risk that rural businesses will be faced with an inequitable transition. There is a risk of urban populations transitioning to EVs and rural businesses being unable to do so due to a significant vacuum in technology which has not taken sufficient account of the realities of farm operations. How can the government incentivise research and development to reduce this technology vacuum?

Council supports mandatory product stewardship for batteries to be in place to support the planned increased use of electric vehicles and solar power. Council endorses the scheme design to follow the waste hierarchy and focus on re-design, refurbishment, and reuse first, before responsible recycling and then disposal of residual waste.

Council looks forward to working with central government to unlock the potential reductions in carbon emissions.

### Building and construction

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

This question raises more questions for Council:

- How this will be enforced: by Building Control Authorities, or territorial authorities, or MBIE, or Worksafe NZ, or someone else?
- Will this copy the same framework as for earthquake-prone buildings?
- What level of council resourcing will be required?

- Will the mandate require building owners to upgrade the existing building stock if energy performance is found to be below average, or below a required standard? A cost/benefit analysis for the owners of the existing building stock may result in a significant decrease in the property value.
- Will the full cost of upgrading existing buildings to the required energy efficiency standards have to be met by the building owners? Or will there be government grant available, or other financial assistance?
- What would be the proposed timescale for ensuring existing buildings are upgraded to meet the standard?

In the United Kingdom, the high cost of upgrading existing buildings as a result of major changes to building regulations was often higher than the building was worth.

It is Council's view that such a programme would require a lot of sector and community education.

## 71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

In Council's view there should be collaboration with the Construction Accord Working Groups, led by MBIE, to introduce new legislation to achieve these reductions. As in the waste sector, incentives may be needed to ensure that the cheapest option is also the most energy efficient option.

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

Council suggests that unless the removal of fossil fuels in boilers is compulsory, there will be no compliance. Therefore, there will need to be new legislation to require the removal of existing boilers and encourage building design that require no- or low-emission energy alternatives.

74. Do you believe that the Government's policies and proposed actions to reduce building-related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

This will have same effect on building owners as in Council's response to question 70 (above). Ratepayers and taxpayers will also be affected where the costs of reducing emissions are borne by local authorities or government departments.

Council asks for further details of any financing schemes such as a contestable fund, or subsidies. The costs of upgrading existing buildings will be very high, so one option is to apply the policies to new buildings only and allow the existing building stock to complete its

lifecycle. However, this is unlikely to achieve sufficient reduction in emissions from buildings.

In the United Kingdom upgrading energy sources to use solar panels is subsidised 100 percent; could a similar scheme be implemented in New Zealand. There are currently no incentives to use new technology especially as the costs in New Zealand are too high in comparison to other countries.

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

In Council's opinion, there needs to be highly skilled workforce with increased education and training with cost incentives to encourage opportunities to be pursued. The approval process for new products needs to include energy efficiency ratings for far more products than at present. In the United Kingdom for example, new buildings and fittings need to be energy efficient and all appliances installed in new buildings are required to have 5-star energy efficiency ratings.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

Council would like to point out that materials may be reusable in some circumstances, but not for new buildings as standards have been upgraded while those products have been in use. Therefore, the market for reusable materials may not be as great as envisaged. Increased reuse of building materials could be encouraged by incentivising building upgrades and extensions instead of placing greater reliance on replacement housing or new builds. This needs to be considered as part of the connected and strategic thinking between the ERP, the resource management reforms and the NPS for Urban Development.

79. What should the Government take into account in exploring how to encourage low-emissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

Council believes this must include re-training programmes driven my MBIE to create a highly skilled workforce.

Council also has concerns that building upgrades and retrofits will be slowed by product shortages, rising interest rates and the availability of finance, and increasing standards, all of which contribute to increasing costs. Council suggests the government considers some kind of KiwiSave-type contributory scheme to enable building owners to save for future upgrade costs; this would include mandatory use of suppliers who are able to achieve cost reductions similar to the All-of-Government procurement scheme, and who would then be able to self-certify their work without a building consent. Costs would further be reduced by having products and installations approved in advance for energy efficiency works.

80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

In Council's view there needs to be a robust, MBIE-driven scheme of trainee/cadetships to raise the skills level and capacity for new technologies and constructing energy efficient buildings and retrofitting existing buildings. New Zealand currently does not enough skills in this area. An interim gap-analysis is required to determine the present skills gap with a view to attracting skills from overseas.

Council would like to see products made locally as this would help the domestic manufacturing sector as well as providing employment and training and hopefully reducing product costs.

81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

Council asks that the government raises the level on minimum standards within the Building Code for new builds and retrofits. New Zealand should benchmark with countries such as the United Kingdom when reviewing its building regulations.

Do building constructed prior to the Building Code need a different energy efficiency code? If so, who would enforce and administer it?

## 82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

Council comments that there needs to be a major culture change in the New Zealand building sector and environment. The most energy efficient products need to be produced (preferably locally, or within New Zealand), transported and installed in the most energy efficient way to an energy efficient design.

### Waste

# 89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

It is appropriate that the responsibility to reduce emissions from waste is shared where the waste is generated. According to the Waste Strategy (currently under consultation)

"household waste makes up about 20 per cent of total waste disposed of in Aotearoa" and it could be assumed that councils are responsible for 11% of methane from wastewater treatment. Therefore, a large part of the responsibility for reducing methane from waste needs to sit with the other large waste -and specifically organic waste - generators.

Overall it is an ambitious target, and without any surety of funding and support from Central Government it is hard to assess if it is achievable.

Council undertook a Solid Waste Audit in late 2020, and that showed that food waste is a large proportion of household waste at 36.6% (green waste and 'other organic' were 13.6%). Purely from a methane reduction perspective a solution is to offer a kerbside food waste collection service to remove this element of waste from landfill. The question is how to do that without over burdening ratepayers? These services are more costly in small districts, due to the lack of affordable infrastructure and therefore the costs on moving resources to recovery facilities elsewhere. Ensuring Government support to allow equal access to services and Government supported infrastructure is important.

# 90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?

Council supports this proposal. Research shows that people can be very informed and educated, but this does not necessarily translate into a change in habits or behaviours. Committing to education programmes will be the key to attain a change in behaviour rather than just an increase in knowledge. And where some emissions are linked to very socially popular trends like fast fashion and our consumeristic lifestyles, this work needs to be acknowledged to be a long term initiative.

## 91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

Council would agree with subsidised or supported services such as more product stewardship schemes. Priorities could be batteries and tyres; treated timber and other construction products; a bed mattress and frame scheme as in Australia. Producers need to take more responsibility for the end-of-life of their products, not the consumers or councils. Currently transport costs more than landfill (especially for heavy items) so it is not viable to expect change from the industry until that financial tipping point is reached. Council cannot ask or encourage our community to do better when there are no services locally that can accept materials.

# 92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

Council's support would be dependent on the access to, and the cost of, alternative treatments for the Waipā community. A target date of 2030 provides a short space of time to use existing council procedures (Long Term Planning processes, community consultation, commercial tender process and contract development, and community education etc) to start a food waste collection.

## 93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

Council supports this proposal.

## 94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

Council supports this proposal. Companies should be supported to purchase the machines they need to convert **all** the methane captured into energy.

# 95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

Council supports standardising which items and in what condition will be accepted in collection systems. This would enable national advertising on a simple list of what can and cannot be recycled. One benefit of this would be to create pressure on companies to adopt appropriately recyclable packaging; and on consumers to clearly understand the packaging they purchase would not be accepted by the council-provided recycling service.

## 96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?

In Council's opinion, this is a description of a resource recovery centre, which is the ambition for waste diversion (and thus methane reduction). However, these often require more funding as more space and many more staff are needed to assist the community to separate their loads. Establishing a financial package to support existing transfer stations to purchase adjoining land (where possible) and increasing the number of waste streams for diversion, plus increasing staffing levels to support much higher resource recovery, is a welcome suggestion for transitioning from the status quo to improved resource recovery.

## 99. What other options could significantly reduce landfill waste emissions across Aotearoa?

Council proposes the following options:

### a) Identifying options for treated wood (reduction, diversion and disposal)

Develop a product stewardship scheme for treated timber. This is a massive waste stream, but it is cost prohibitive to ship it to the very few places in New Zealand that have a genuine use for it.

### b) Reducing waste from construction and demolition

There needs to be equitable access to Government-supported diversion infrastructure such as construction and demolition material recovery centres for the regions. In the Waikato there is no such access for construction and demolition diversion. Transporting waste for diversion is cost prohibitive. Equitable access for all regions therefore needs to be included when developing infrastructure to support removal of wood and plaster board from landfill.

### c) Fast-tracking a waste data and licensing system

Requiring all councils to licence and obtain data from the same few companies (where trucks often cross council boundaries) is a huge replication of effort for both council and industry. Licencing at a Regional Council level is a sensible development. Council bylaws are not an easy tool to ensure compliance when the industry cites "commercial sensitivity" as a reason to not provide data for Waste Assessments (a MfE requirement for developing a Waste Minimisation and Management Plan to receive Waste Levy funds).

### d) Partnerships and collaboration will be key to achieving our goals. In particular, partnerships between local authorities, industry and community.

Council welcomes genuine partnerships and an understanding of what is happening with central government's partners in local government. However, the key is understanding and respecting Council processes and timeframes in order to get genuine feedback via workshops or meetings on policy development, not just consultation. This is true across all the sectors identified in this Emissions Reduction Plan discussion document.



#### SUBMISSION BY THE WASTE MANAGEMENT INDUSTRY FORUM ON TE HAU MĀROHI KI ANAMATA TRANSITIONING TO A LOW-EMISSIONS AND CLIMATE-RESILIENT FUTURE

| То:           | Ministry for the Environment<br>PO Box 10362<br>Wellington 6143 |
|---------------|---|
| Submitter:    | Waste Management Industry Forum                                 |
| Submitted by: |   |
| Date:         | 24 November 2021  |

#### Introduction

The Waste Management Industry Forum (WMIF) appreciates the opportunity to provide feedback on the waste section of *Te hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future*.

The WMIF was established in 2018 with the goal of articulating a clear and coherent industry voice on key waste management policy issues. Taken together, our group manages in the order of 85% of the waste and recycling flow in New Zealand. The WMIF sits under the umbrella of the Auckland Business Chamber, and its membership includes:

- EnviroNZ
- Green Gorilla
- J.J. Richards
- Northland Waste
- Oji Fibre Solutions
- Smart Environmental
- Waste Management

WMIF members strongly share the Government's desire to reduce emissions from the waste sector, and welcome any opportunity to discuss how our sector can continue to expand and improve the contribution it makes to national emissions objectives.

We are not, however, supportive of the approach put forward in the discussion document, and do not see it as a recipe to deliver the emissions outcomes the Government is seeking. To make meaningful, lasting progress, efforts need to be directed where the opportunity for impact is

greatest (in this case, the poor-performing parts of the sector), and take into account all of the sector's emissions, not just biogenic methane from landfills.

#### Commentary

#### *i.* Waste sector already performing well

For reasons of context, there should be an acknowledgement in the discussion document of the fact that the waste sector – solid waste, specifically – is already one of the country's best performing when it comes to emissions. Over the last 20 years, the per capita GHG emissions generated by solid waste disposal have fallen from around 1 tonne per annum to 540kg per annum (see Figure 1).

Figure 1: Solid waste disposal CO2e per capita (tonnes), from 1990 to 2019



Source: New Zealand Greenhouse Gas Inventory 1990-2019

We note that emissions from solid waste (which is the sub-sector that WMIF members operate in) represent only 2.6% of the national total. This is significantly lower than the 4% figure quoted in the discussion document for the whole of the waste sector, which includes domestic and industrial waste water, biological treatment of waste, incineration and open burning, and waste water treatment and discharge.

Given that all the Government's interventions and reforms are focused on solid waste, and that solid waste bears limited practical or logical connection to the other waste areas it is grouped with, we consider the 2.6% figure more appropriate when it comes to assessing the sector's emissions profile.

This is not to dismiss the value of ongoing and increased action – waste collectors and recyclers can and must do more, and are committed to doing so. Rather, it is to say that the material impacts of any change will be relatively small (in absolute and proportional terms), and that interventions will need to be targeted to the poorer-performing parts of the sector.

### *ii.* Not all landfills are the same

Meanwhile, in its response to the challenges and opportunities of reducing solid waste emissions, the Government must clearly differentiate between Class 1 landfills and Class 2-5 landfills. As

illustrated by the New Zealand Greenhouse Gas Inventory 1990-2019, emissions from managed landfills have trended steadily downwards in the past two decades, while those from unmanaged landfills and farm fills have largely held firm. Twenty years ago, emissions from Class 1 landfills significantly exceeded the combined emissions of other landfills; now, it is the other landfills that make the largest contribution.



*Figure 2: Profile of emissions from New Zealand's Waste sector by source category from 1990 to 2019* 

As noted by the Climate Change Commission, modern, high-performing Class 1 landfills (with gas capture capability) receive the vast bulk of New Zealand's organic waste, but only account for 25% of the emissions that this waste generates.<sup>1</sup>

### iii. Class 1 landfills are a highly effective solution for organic waste

The success of Class 1 landfills when it comes to reducing emissions speaks to the effectiveness of their use of gas capture to deal with organic waste. Leading Class 1 landfills (such as Redvale, Hampton Downs, and Kate Valley) are capable of 90%+ capture efficiency. Where these facilities return electricity to the grid, they typically do so close to the point of demand (avoiding line losses and increasing the efficiency of transmission); where they use recovered energy (rather than fossil fuels) to power on-site activities such as composting or food production, the carbon footprint of those activities is significantly reduced.

On this basis, we would strongly oppose any effort to ban organic waste from Class 1 landfills, as is posited in the discussion document. We would, however, support any steps to make gas capture mandatory at all municipal landfills, though we note that it has been a requirement for almost 20 years under the Resource Management Act (National Environmental Standards for Air Quality).

#### iv. Diversion from landfill not an objective on its own

We are frustrated to see that the Government's continued focus on "diversion" from landfill – the shortcomings of which we have highlighted on numerous occasions – is manifested in the discussion document.

Source: New Zealand Greenhouse Gas Inventory 1990-2019

<sup>&</sup>lt;sup>1</sup> He Pou a Rangi the Climate Change Commission, Ināia tonu nei: a low emissions future for Aotearoa, p 296.

It makes sense to pursue alternatives to landfill where they lead to increased recycling and recovery (in a carbon-efficient way), but diversion from landfill is not an objective in and of itself. Approaching it in this way, and constantly referencing it, reinforces an ideological opposition to landfill, one based more on ideology than evidence.

Denying a role for landfills in the waste system is unrealistic – for the foreseeable future, there will be items that cannot be recycled, re-used or recovered. It also has the potential to be environmentally damaging, where it leads to alternative recycling or recovery options that have a much larger carbon footprint (i.e., through transport and processing emissions) or increased volumes of organic waste being re-directed towards landfill sites with no gas capture.

We see no need for Class 1 landfills and the function they perform to be singled out in the discussion around organic waste solutions. Instead, the discussion should focus first on minimising the volume of consumer-driven organic waste that is generated. Second, recognising that there will always be *some* waste generated, it should focus on identifying the most carbon- and resource-efficient way to deal with that waste, whether landfill or otherwise.

This approach would see any steps to, for instance, separate out kerbside collection of food waste and subsequent recovery or recycling initiatives, take full account of net carbon impacts. How would any emissions-reduction benefits achieved by anaerobic digestion or composting (as opposed to landfill gas capture) be offset by increased emissions as a result of additional transport and handling? We would like to know to what extent this has been taken into account in the case of the Ecogas anaerobic digestion plant in Reporoa.

v. Focus energy on Class 2-5 landfills

Consistent with our comments above, it is our view that Government efforts to reduce emissions should be focussed on Class 2-5 landfills. We support the removal of organics from Class 2-5 landfills (where practicable alternatives are in place), as soon as is realistically possible. We see no logic, however, in requiring Class 2-5 landfills to first invest in gas capture.

Equally as important, we would like to see concrete steps taken towards better monitoring of farm fills, and restricting the types of waste they can receive, with a view to potentially eliminating them from the waste system altogether.

vi. Respect existing commercial activities

We note that a number of recycling initiatives have been set up by the private sector to deal with organic waste (for instance composting) that, over and above delivering environmental benefits, are performing well commercially. Policy decisions must not be made that render those initiatives redundant, by tilting the playing field in favour of subsidised alternatives.

### vii. Separation at transfer stations

Separation of waste streams at transfer stations is an appealing idea in theory, but likely to be less so in practice. The task of re-configuring transfer stations in order to accommodate MRFs and/or multiple sorting areas would be difficult and, in many cases, impossible (due as much as anything to limited space). While there may be some scope for sorting of household waste at these sites, sorting of commercial waste would be far more challenging, given the volumes of material involved and the additional work that it would impose on the rest of the supply chain.

We would also highlight the serious potential for health and safety issues as a result of human interface with the waste being processed and the machinery doing the processing. This risk would be particularly acute in any situation where waste was being recovered manually from pits. We note that most transfer stations have been designed specifically to avoid the need for any manual sorting.

#### **Concluding remarks**

To reiterate, we support the Government's effort to further reduce waste sector emissions, but believe that this effort must be focused on the worst-performing (in an emissions sense) parts of the sector – unmanaged fills, farm fills, and open and uncontrolled burning. It also needs to look beyond biogenic methane emissions alone, and also consider carbon emissions as a result of transport and any other additional activity in the supply chain.

Given their technical expertise and their knowledge of the wider value chain, WMIF members are ideally and uniquely placed to provide insights on the practicalities of a reconfigured approach. We look forward to meeting with Ministry for the Environment officials to discuss these points in more detail.

Yours sincerely,





### SUBMISSION TO THE DRAFT EMISSIONS REDUCTION PLAN November 2021

### BACKGROUND

WeCreate is the alliance comprising forty of Aotearoa's major creative industry associations and organisations (representing 30,000+ Kiwi creators, support people, and creative businesses), which was founded in 2014 to propel growth in the sector and increase its contribution to New Zealand's social and economic wellbeing.

In 2016 WeCreate commissioned NZIER to produce a valuation of the creative sector which estimated its **contribution to GDP at \$17.5bn and employment at 131,000 people** – one third of whom work outside the creative industries.

The creative sector has been at the forefront of the transition to a low-carbon digital economy since the 1980s when screen and music production began to embrace digital and we saw the advent of digital video games. In the 2020s most creative businesses are highly digital in how they produce content, provide services, market, export ('weightlessly') and earn.

**Creative tech** (CreaTech) is the rapidly growing genre of activities in which technology enables creativity to produce new value-added products, services or experiences – and vice versa. In CreaTech a creative element - such as the use of design, story-telling, audio-visual material or performance – is the key constituent in achieving the final output and its desired benefits. The fusion of creativity and technology is revolutionising how we learn, live and work, and the environment we live in, and is increasingly being applied to the transformation of other sectors such as housing, tourism, health care, aged care and education.

### **SUBMISSION**

WeCreate welcomes the Emissions Reduction Plan as a cross-government initiative developed alongside communities and business.

### We submit that the draft plan significantly understates the opportunity to enhance and advance the transition to a low-carbon future via the strategic leverage of Aotearoa's knowledge-based and digital economies<sup>1</sup>.

The Draft Plan states that 'New business models are required, and public attitudes and consumer preferences need to shift to support them. We need to see new approaches to how we power our economy and lifestyles, how we build our cities and how we move around them', yet the Draft Plan focusses almost entirely on reducing emissions, and not on concurrently empowering and growing New Zealand's already low-emissions industries - such as the creative sector and digital technologies - and consequently enabling greater economic diversity and resilience. WeCreate supports NZTech's submission regarding a Technology Roadmap as an addendum to the Emissions Reduction Plan.

The creation of Intellectual Property (upon which the creative sector is based) largely relies on human imagination rather than natural resources and the consumption of energy. Creative IP businesses can scale rapidly, and export globally and weightlessly, without a commensurate input of energy and resources.

<sup>&</sup>lt;sup>1</sup> <u>https://www.mbie.govt.nz/dmsdocument/5866-growing-innovative-industries-in-new-zealand-from-the-knowledge-wave-to-the-digital-age</u>

### Creativity, like technology, is not a sector vertical but a **horizontal enabler of environmental, social, economic, educational and cultural wellbein**g.

The New Zealand creative and cultural sector has been an early adopter of digital, and in several segments is among world leaders (visual effects, video games, music streaming uptake). As it has for technology businesses, COVID-19 has accelerated the domestic and export growth of digital creative products and services (including for traditional art forms), as the sector has been forced to adapt to online creation and delivery more rapidly than many others and has found new markets as a consequence.

The cultural and creative sector also has an important role to play in meaningfully engaging the public with climate change, and promoting the attitudes and actions required to transition to a cleaner, greener Aotearoa.

A key challenge is that climate change is an unprecedented "collective action problem" that requires agreement, collaboration and shared action among people and organisations that may not normally collaborate, ranging from the community and local authority levels to large-scale transnational political agreements. Also, decisions on climate action taken by organisations, communities and individuals will often depend not only on a factual understanding of climate change but the underlying personal values, social and cultural norms, and the ability to adapt. For this reason, there is a growing recognition that climate change constitutes not only an environmental and scientific challenge but a cultural challenge, and that there is a need to make climate change and climate action more meaningful and personally relevant in order for a comprehensive transition to take place. This will require a deeper understanding and appreciation of how people interpret climate change communications, assign value to different aspects of climate action, their ability to adapt to the expected impacts as well as consideration of methods of engagement beyond the presentation of the scientific facts.<sup>2</sup>

Alongside the Digital Technologies Industry Transformation Plan, a **broader and more ambitious Digital Industry strategic approach** would give Aotearoa the opportunity to both reduce emissions and to leverage economic growth and wellbeing benefits across other highly digital, and adjacent, sectors to Digital Technologies, and would not require stretch of capacity and resource.

Digital businesses outside of the ICT sector also:

- Generate 'weightless' export revenue
- Are less constrained by physical and natural resource limitations than other industries
- Create high value jobs

It is important however to clearly differentiate the differences in opportunities and challenges between:

- e-commerce of physical goods and services,
- and digital trade in 'weightless' digital goods and services.

For example, there are significant differences between the supply chain required to produce physical vs digital goods, the value produced, distribution logistics and carbon footprints, and trade barriers.

The 2021 PwC Entertainment & Media Outlook<sup>3</sup> predicts that there is enormous potential for growth in creative digital markets: *The pandemic induced contraction of 2020 is giving way to a strong rebound this year and a return to continued growth above global GDP over the coming five years. The central role that the ever-expanding array of media experiences plays in consumers' lives is set not just to endure but to strengthen over time.* 

Reinstating the Creative ITP (proposed in 2019, and put on hold due to COVID-19 in 2020), as a complementary strategy alongside the Draft Emissions Reduction Plan, Digital Strategy and Digital Technologies ITP, is an obvious solution to '*How low-emissions actions and business models could be encouraged*'.

- All creative industries have a digital element with some being almost entirely digital (eg. interactive media and recorded music)
- The sector is increasingly well-organised with clear channels of communication and is uniquely placed to engage the public with the Emissions Reduction Plan.

<sup>&</sup>lt;sup>2</sup> https://www.creativeireland.gov.ie/app/uploads/2019/12/Engaging-the-Public-on-Climate-Change.pdf <sup>3</sup> https://www.pug.com/gy/on/inductrics/tmt/modia/authork.html

<sup>&</sup>lt;sup>3</sup> https://www.pwc.com/gx/en/industries/tmt/media/outlook.html

- There are loud calls for a national creative sector strategy from all parts of the creative and cultural sector.
- The WeCreate Action Plan (2019 please see below), Screen Sector Strategy (2020), Interactive Aotearoa (2019) and various regional arts & culture/creative industries strategies provide well-informed foundations for the development of the Creative ITP.
- An industry-government strategic approach that encompasses both the digital and creative & cultural sectors has been proven in the UK this has seen their sector grow five times faster than the average rate of the UK economy (pre-COVID) and increase their contribution to GVA by 60.5% in eight years.
   www.thecreativeindustries.co.uk
- Many creative businesses are purpose-driven, low carbon, and positively impact both economic and social wellbeing.

Ngā mihi maioha,

Leader

c/- PO Box 331488, Takapuna Auckland 0740, New Zealand



GROWING OUR CREATIVE SECTOR www.wecreate.org.nz

#### The WeCreate Action Plan

Between 2017 and 2019 WeCreate undertook extensive consultation across the sector, via hui and specific working groups (some of which are ongoing), resulting in a primary objective of partnering with government in a pan-Ministerial approach to an Action Plan to boost economic development and growth in the sector. A draft Action Plan was delivered to government in March 2019, and the sector was delighted to learn that it would be included in MBIE's Industry Transformation Plan programme from 2020.

The development of the WeCreate Action Plan included officials from MBIE, MCH, MFAT, NZTE, MoE, Stats NZ, and Callaghan Innovation. Regular hui were held to connect these Ministries and agencies with industry, and with each other, in a more 'joined-up' approach to the sector.

Alongside the sector-level Action Plan, WeCreate has been closely connected to the development of the Interactive Aotearoa report, the Screen Sector Strategy, and a variety of regional creative industries and arts strategies – all of which share strong similarities of intent and make recommendations to maximise opportunities and solve issues, and which could be most effectively addressed in a pan-sector approach.

With the advent of COVID-19, WeCreate consulted its Members & Friends on the impacts of the pandemic on their industries, and adapted the Action Plan to a Recovery and Renewal Plan, to address the immediate needs of the sector and lay the foundations for the ITP. The Recovery & Renewal Plan was delivered to Ministers in early April 2020.

In late July 2020, WeCreate was informed by MBIE and MCH that the Industry Transformation Plan for the creative sector would not be progressing for the forseeable future, in light of the significant Budget 2020 investment made by government to support the Arts, Culture and Heritage Sector through its recovery from COVID-19.

WeCreate's current work-streams on behalf of the sector include:

- On-going liaison with government departments relevant to the economic development of the sector including MBIE, MCH, MoE, TEC, MFAT, NZTE, NZ Story, MSD, Stats NZ, Callaghan Innovation.
- Working closely with NZ Tech/MBIE on the creative tech aspects of the Digital Industry Transformation Plan, and the NZ Tech & Innovation Story.
- Advising MCH on the development of a new measurement model for the sector.
- Participating in the Review of the Copyright Act from a sector-level perspective.
- Participating in the Reference Group for the design of the Workforce Development Councils in the Reform of Vocational Education, liaising between industry and the Toi Mai WDC, and liaising with central and local government on several other projects related to skills, capability and business development.
- Providing industry advice and connections to MFAT (including APEC/ABAC) regarding current and forthcoming trade negotiations and development of policy on digital trade.
- Providing industry advice and connections to the Productivity Commission in respect of its 'Frontier Firms' enquiry.
- On-going liaison with other strategic work in, or relevant to, the sector including the Screen Sector Strategy, Interactive Aotearoa, Te Taumata Toi a Iwi, Create Auckland 2030 and other regional arts/creative strategies all of which have many commonalities with WeCreate's Action Plan.
- On-going liaison with CreaTer the alliance of creative tertiary educators.


### WeCreate's Members and Friends are:

| Advertising & Illustrative Photographers Assn | APRA AMCOS NZ                     |
|---|-----------------------------------|
| Auckland Unlimited (formerly ATEED/RFA)       | Australia & NZ Screen Association |
| Christian Copyright Licensing International   | Commercial Communications Council |
| Copyright Licensing NZ                        | Creative NZ                       |
| Design Assembly                               | Designco                          |
| Directors & Editors Guild NZ                  | Equity NZ                         |
| Home Entertainment Association NZ             | Independent Music NZ              |
| Interactive Games & Entertainment Assn        | Mindful Fashion NZ                |
| Motion Picture Distributors Association       | Music Managers Forum NZ           |
| NZ Comedy Trust                               | NZ Film Commission                |
| NZ Game Developers Association                | NZ Institute of Architects        |
| NZ Institute of Professional Photography      | NZ Music Commission               |
| NZ On Air                                     | NZ Society of Authors             |
| NZ Writers Guild                              | Playmarket                        |
| Print Media Copyright Agency                  | Publishers Association of NZ      |
| Recorded Music NZ                             | SAE Institute                     |
| Screen Industry Guild Aotearoa NZ             | Script to Screen                  |
| Screenrights                                  | Sky Network Television            |
| Screen Production and Development Association | The Creative Thinking Project     |
| TVNZ  | Weta Group                        |

### WELLINGTON REGION CLIMATE CHANGE FORUM

26 November 2021

Delivered via email: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

Tēnā koe Minister Shaw,

Thank you for the opportunity to provide input on your consultation document regarding the National Emissions Reduction Plan. This letter is sent on behalf of the elected members of the Wellington Region Climate Change Forum.

Our Forum<sup>1</sup> includes elected representatives of all nine local authorities in the Wellington Region and provides for inclusion of mana whenua. We work hard to achieve regional co-operation and recommend aligned actions to address climate change mitigation and adaptation.

We support the intent of the submissions to the Ministry for the Environment made by each of the following Councils:

- Wellington City Council
- Hutt City Council
- Upper Hutt City Council
- Kāpiti Coast District Council
- Porirua City Council
- Greater Wellington Regional Council, and
- Joint submission from the Masterton, Carterton, and South Wairarapa District Councils.

This letter does not cut across the individual Council submissions; rather it brings attention to eight areas where the Forum identifies strong alignment and/or support. We acknowledge the climate change scenario for the Wairarapa, as a predominantly provincial/rural area, is different to other parts of our region, reflecting the varied challenges that climate change presents for more rural parts of the country and the need for a just transition to a zero-carbon economy.

### 1. General direction:

- a. We welcome the direction from central government. However, the document is unclear how Aotearoa will achieve its targets under the Paris Agreement.
- b. While the consultation document recognises the need to 'empower central and local government, iwi/Māori, communities and businesses', it overlooks the opportunities available through the well-established linkages between local government bodies, businesses and communities. In the same vein, local-central government partnerships need to take a systems approach and engage in more holistic

<sup>&</sup>lt;sup>1</sup> The elected members of the Wellington Region Climate Change Forum are: Mayor Gurunathan and Cr Handford (KCDC); Cr Jephson and Cr West (SWDC), Cr Mitchell and Cr Briggs (HCC); Cr Nash and Cr Connelly (GWRC); Cr Paul and Cr Foon (WCC); Cr Peterson and Cr Ryan (MDC); Deputy Mayor Swales and Mayor Guppy (UHCC); Cr Trlin and Cr Waddle (PCC); Cr Greathead and Cr Cretney (CDC).

collaboration rather than partnering up on multiple topics, putting pressure on already strained resources. This will enable faster and more ambitious action.

- c. The Plan must provide clear direction on what role each Region must play to meet national targets, to enable 78 authorities to move toward the targets at pace.
- d. We recommend that you refer to submissions made to the Climate Change Commission Draft Advice to ensure that these submissions are considered in addition to the new submissions forwarded by our Councils.

#### 2. Principles:

- a. The Forum supports the principles of acting with urgency in a just and equitable way, and recommends integration of the four well-beings, intergenerational equity and Sustainable Development Goals into the Plan to enable win-wins and avoid maladaptation. Affordability needs to be considered alongside the cost of not acting.
- b. We support the Climate Change Commission's Equitable Transition Strategy with the additional objective to support disadvantaged communities and households using dedicated carbon funds to assist climate mitigation and adaptation action. This needs to be co-designed alongside iwi/Māori, local government, regional economic development agencies, businesses, workers, unions, the disability community and community groups. We are concerned there has been no apparent progress on what this strategy might look like.

#### 3. Te Ao Māori:

a. We support a by Māori for Māori approach and a genuine enduring commitment to giving effect to te Tiriti o Waitangi, while acknowledging that a true partnership requires partners to be equally resourced and able to meet on equal terms.

#### 4. Planning:

a. We support the densification of the urban form around transport nodes. We are concerned that green field developments already underway, or enabled through the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill, will lock in increased emissions unless accompanied by active and mass transit options for transport. We note the Wellington Regional Growth Framework has established objectives to address population growth in this direction.

#### 5. Transport:

- We support targets to reduce emissions and vehicle kilometres travelled but question the 20% reduction target when the Ministry of Transport has advised that a 39% reduction by 2035 is required to meet the emissions targets.
- b. We call for sustainable funding sources to be made available to achieve emissions targets, such as guaranteeing funding for public transport for the foreseeable future.
- c. The alignment of the Government Policy Statement for Land Transport, the National Land Transport Plan and Fund and the NZ Upgrade programmes with the Emissions Reduction Plan is essential.

### 6. Central government coordination and alignment:

a. For true success, we consider the integration of all central government reform (including the Local Government review with a prioritised climate adaptation and

mitigation focus), and consistent consideration of climate change across all Government plans, policies and strategies, to be crucial.

b. We call for delivery dates to the measures in the Emissions Reduction Plan to be attached so departments can be held accountable by the public and Ministers.

#### 7. Biodiversity and nature-based solutions:

- a. Adopting the wide-spread use of natural infrastructure and promoting nature-based solutions as low cost, low risk approaches will address the climate and biodiversity crises simultaneously.
- b. We call for significantly increased investment in wide-ranging nature-based solutions to prevent further loss and enable restoration of carbon and species-rich ecosystems on land and in water. Wetlands and peatlands, for example, feature in the Wellington Region and play a role in sequestering carbon and in climate resilience.

#### 8. Forestry:

- a. Reducing gross emissions needs to be the main priority, ahead of forestry planting for sequestration purposes.
- b. We strongly encourage the Government to ensure that wider environmental degradation from production forestry is brought to a minimum.
- c. We support the enabling of opportunities to process raw logs in Aotearoa.
- d. We call for incentivisation of 'multi-purpose' permanent and native forest, for example, a permanent forest with mountain bike tracks including an educational component about the role of permanent forestry as a carbon sink.
- e. We support increased predator control in all forested areas to maximise climate adaptation, mitigation and biodiversity outcomes.

The Wellington Region Climate Change Forum considers that partnership between central and local government is essential as we embark on new ways of working to achieve a zero emissions future. We look forward to seeing a comprehensive and ambitious Emissions Reduction Plan.

#### Ngā mihi nui

**Councillor Thomas Nash** 

Co-Chair, Wellington Region Climate Change Forum



Office of the Chairperson 100 Cuba Street Wellington T 04 384 5708 www.gw.govt.nz

By email

24 November 2021

Emissions reduction plan consultation Ministry for the Environment PO Box 10362 Wellington 6143

Email to: <a href="mailto:climateconsultation2021@mfe.govt.nz">climateconsultation2021@mfe.govt.nz</a>

Tēnā koutou

### Submission on Te hau mārohi ki anamata: Transitioning to a low-emissions and climate-resilient future discussion document

The Wellington Regional Transport Committee (RTC) thanks the Ministry for the Environment for leading work on the Emissions Reduction Plan discussion document, and for the opportunity to make a submission. We also acknowledge the contribution the Ministry of Transport has made to the Transport section.

We welcome the suite of initiatives proposed to reduce transport emissions. At the regional and local level, we believe reducing demand and enabling the accelerated delivery of mode shift activities is the most significant and beneficial approach. We see improving the fleet as a secondary and longer-term focus where appropriate alternatives are not available or practicable. There are a number of areas however, where we need action from central government to facilitate systems level change to enable this to happen, particularly with the urgency that is required in a crisis. We note for these significant changes to have greatest impact, the current levels of maintenance and operations must be sustained.

Through the recently adopted Wellington Regional Land Transport Plan 2021 (RLTP) the RTC – a partnership of all local councils in the region, Waka Kotahi and KiwiRail – have agreed to target a reduction in the region's land transport emissions of 35%, and a 40% increase of public transport and active modes share by 2030. We have collectively agreed policies to support this direction and have identified and prioritised a programme of activities to implement these targets and other important transport outcomes like safety and resilience.

In the recently released National Land Transport Programme (NLTP), 92% of the region's bid was included. This is much welcomed support for our programme and will go a long way in aiding our emission reduction

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and mode shift targets. However, significant obstacles remain for us, and our RLTP partners, in playing our part to achieve a just transition to a low-carbon transport sector.

In our view, the priority areas to enable effective action are as follows:

- Establish adequate and sustainable funding sources to support the scale of Government's emission reduction ambitions
- Reform the transport investment decision making and funding approval settings and processes
- Remove regulatory barriers to delivery
- Provide the tools and partnerships needed to re-shape our cities and towns and change the way we travel
- Develop nationally consistent and robust tools to measure and monitor emission reduction at the national, regional, local and project level
- Build social licence for change.

Expanding on the points above, current issues and recommendations are noted below:

### • Establish adequate and sustainable funding sources to support the scale of Government's emission reduction ambitions

We need greater certainty of funding to deliver on key public transport and urban development programmes. The National Land Transport Fund is already strained and is inadequate to facilitate the transformation required over the next decade. We understand that the Ministry of Transport has commenced work on medium-term revenue requirements and agree that alternative funding sources must be identified with urgency. We would like to note the importance of the continuation of essential maintenance and renewals work and any future funding initiatives should be in addition to these requirements.

#### • Reform the transport investment decision making and funding approval settings and processes

Current business case and approval processes to unlock transport funding are long, cumbersome and expensive. They are not designed for addressing a climate emergency. There is considerable opportunity for streamlining the processes without compromising on investment assurance and value for money objectives, particularly for climate reduction and mode shift 'no-brainers' like bus priority, and walking and cycling improvements. This activity, plus public transport improvements and active-mode facilities, urgently need processes that accelerate delivery and free up resources for implementation. The acceleration of bus priority improvements in Wellington City has been considerably stalled. Both Greater Wellington Regional Council and Wellington City Council adopted the Bus Priority Action Plan in December 2019 but with a change in business case process and a wider multi-modal lens required, two years later we are just now able to proceed with further detailed corridor planning. This is not supporting the rhetoric that we must act now.

#### • Remove regulatory barriers to delivery

Issues such as overlapping responsibilities between public transport authorities and road controlling authorities and lengthy traffic resolution processes create unnecessary obstacles to getting things



done. Repetitive and drawn out consultation requirements also add to delays and cost money that could be better spend on improvements themselves. We would like you to work with us to identify and remedy these barriers.

### • Provide the tools and partnerships needed to re-shape our cities and towns and change the way we travel

We welcome regional spatial strategies and look forward to working with you on developing these. However, we recognise the difference between metropolitan centres, provincial centres, towns, and rural areas. Different solutions will be required if all are to reduce their carbon emissions beyond those being deployed in the metropolitan areas. We would welcome the opportunity to work with you further on these tools and partnerships, for example Resource Management Act reform, congestion charging and other pricing options.

### • Develop nationally consistent and robust tools to measure and monitor emission reduction at the national, regional, local and project level

Assessing the carbon emission reduction benefits of regional programmes, transport projects, and urban intensification has been a major challenge in Wellington, nationally, and internationally. A nationally consistent approach would reduce churn and give assurance to government around progress towards reducing our transport emissions. While the factors applied might be at different levels, the framework for analysing major transport and urban transformation projects should align.

#### • Build social licence for change

Lack of community support can be a significant barrier for us. We need support at the national level to give people confidence in a just transition, show the benefits of change, and inspire communities to embrace both systems change and individual actions, noting the different approaches and demands that will be placed on urban and rural residents to reduce emissions. Smaller scale 'quick wins' are an opportunity to demonstrate action and build trust locally. Pilots and trials are a good way to introduce changes; they invite more direct community feedback and provide a better opportunity to take them with us. An added benefit is the quicker, less bureaucratic access to funding. Better funding and support for behaviour change programmes at the local and regional level are critical for enabling behaviour change within communities.

In the Emissions Reduction Plan, we would like to see primary emphasis be given to achieving better travel demand management, including reducing the need for people and goods to travel, and a shift to more sustainable transport modes, over rapid adoption of low-emissions vehicles and fuels in the short and intermediate term, while we continue to progress the urban form changes to our cities and regions that will deliver reductions for the long term. Reducing the need to travel and a shift to more sustainable modes of transport has benefits over a sole focus on emissions reduction and decarbonising the vehicle fleet. These benefits include equity, safety and health benefits, creating more liveable places, and land and resource efficiency. Mode shift also delivers on other government priorities such as those set out in the Government Policy Statement on Housing and Urban Development and Road to Zero Strategy.

Further considerations for the Emissions Reduction Plan include:

• Regarding the proposal to **implement Mode Shift Plans**. The Wellington Region Mode Shift Plan, developed by Waka Kotahi, sits outside the legislative framework and applied a mode-shift lens to collate



projects that were already identified through other planning processes. With regional mode shift targets, policies and activities included in our recently adopted RLTP 2021, updating the Mode Shift Plan in its current form would only duplicate this. However, if the Mode Shift Plan was re-shaped as an action plan, focused on co-ordinated implementation and facilitated fast-tracking of funding allocation and approval, there is potential for it to be a useful tool in accelerating delivery. We would expect the Plan to identify the optimisation of current infrastructure and targeted delivery of 'quick wins', with an integrated view of the long-term significant changes that are underway. We would welcome the opportunity to work with Waka Kotahi on refreshing Wellington Region's Mode Shift Plan.

- We support advancement of the National Freight Strategy. The road freight industry offers significant potential for carbon reduction and greater resilience through mode shift away from road and decarbonisation. Acceleration of the Rail Plan and early adoption of coastal shipping are essential to provide cost effective and attractive alternatives to long-haul freight. Market and regulatory reform is required, however, to provide certainty for operators and to incentivise change. In local and regional markets, emphasis should be given to decarbonising the local delivery fleets and where appropriate changing delivery patterns and modes to ensure greater overall energy efficiency.
- The move away from fossil fuels is underpinned by **renewable energy supplies**. Significant investment in generating and transmission capability will be required to support this shift. Evidence of the current market's ability to deliver this step change is equivocal. We support work to better estimate the requirements through to 2050 and ensure that the market is incentivised to invest in long-term capacity.

The RTC welcomes further discussion on any point raised in this submission and looks forward to seeing this progress to New Zealand's first Emissions Reduction Plan.

Yours sincerely



Adrienne Staples Chair Wellington Regional Transport Committee

For further discussion on the specifics of this submission, please contact:

# Westpac New Zealand Limited

Submission to Ministry for the Environment on *Transitioning to a low-emissions and climate-resilient future.* 

26 November 2021



### 1. INTRODUCTION

- 1.1 This submission is to the Ministry for the Environment (**MfE**) in relation discussion document on the Emissions Reduction Plan (**ERP**) published in October 2021 (**Discussion Document**).
- 1.2 Westpac's contact for this submission is:

General Manager, Experience Hub Westpac New Zealand Limited PO Box 934 Auckland 1010

### 2. SUMMARY OF POSITION

- 2.1 Westpac recognises that climate change is the biggest environmental issue we face, and will impact the long-term prosperity of Aotearoa New Zealand. Westpac re-affirms the view that Aotearoa New Zealand must aim for net-zero levels of long-lived Greenhouse gas (**GHG**) emissions and reduce short-lived gases in line with a 1.5 degree pathway to increase the chances of avoiding catastrophic climate change impacts.
- 2.2 In this context, a comprehensive and robust ERP is essential. Westpac therefore welcomes the development of an ERP and kaupapa that will underpin the future prosperity of New Zealand, creating the opportunity for New Zealand to shift its financial system to better support sustainable social, environmental and economic wellbeing. In this submission, Westpac sets out its views on the issues raised in the Discussion Document, with a particular focus on the Funding and Financing sections (Q24 to Q27). Where relevant, Westpac has also provided some comments in relation to transitioning key sectors (including how climate positive changes can be made in some of these sectors).
- 2.3 Westpac would welcome the opportunity to work further alongside government, either bilaterally or through organisations such as Toitū Tahua, Sustainable Business Council (SBC) and/or the New Zealand Bankers' Association (NZBA). Westpac has been involved in and supports the submissions made by the SBC, NZBA and Toitū Tahua (Centre for Sustainable Finance) in relation to the ERP. Westpac also reiterates the points raised in its previous submission to the Climate Change Commission (Commission) dated 28 March 2021.

### 3. GENERAL COMMENTS

3.1 Westpac remains fully committed to supporting its customers' transition towards a net zero GHG emissions New Zealand (for example, by directing capital towards more sustainable purposes). Decarbonising Aotearoa is necessary and urgent. Setting ambitious, yet achievable, targets, a well-coordinated policy framework and an overall cohesive plan are critical to achieve this.

3.2 Climate change will have a significant effect on the global economy and on the financial system that operates within it. Conversely, the financial system can play a key role in helping to mitigate the economic risks created by climate change, and support with proactive climate change adaptation initiatives.

### The role of the financial sector in reducing emissions

3.3 Westpac agrees that climate change requires a step change in the way our economy functions. How we approach financing and investments is an important catalyst for lowering GHG emissions. Without access to private capital the transition cannot take place given the significant up-front investment required to replace existing assets with low-emissions alternatives. Westpac believes that finance has the ability to influence the right behaviours and direct capital in a way that promotes climate goals. For example; setting targets, promoting and accelerating emissions disclosures, and requiring energy efficiency ratings for residential/commercial buildings can create incentives for investments to reduced emissions. These incentives can be financial (e.g. reduced operating cost) or non-financial (e.g. social licence from operating in line with a net zero pathway).

The financial sector can support the creation of a 'new climate economy' that is aligned to incorporate the realities, risks and opportunities of climate change. The recent COP26 demonstrated the significant role the financial sector can play in addressing climate change, with over \$130tr in private capital committed to transforming the global economy to net zero. As the New Zealand financial sector is heavily represented by large banks, the onus is on these major lenders to be strong contributors of capital and lead the change for other financial market participants, the wider economy and communities more broadly. Westpac is committed to helping guide the necessary paradigm shift and support New Zealand businesses and everyday New Zealanders to play their part in helping this country to mitigate and adapt to this critical 21st century challenge.

- 3.4 The work of Toitū Tahua, and the preceding Sustainable Finance Forum (part of The Aotearoa Circle), provides an important insight into how we can collectively advance the role of the country's financial system, and reshape regulatory and financial policy towards a more sustainable economy. Westpac contributed to the Sustainable Finance Roadmap for Action and believes that its recommendations remain valid and current.
- 3.5 Westpac is also a founding partner of the Climate Leaders Coalition and supports the Climate Leaders Coalition 2017 Climate Change Statement (**Coalition Statement**), which incorporates setting emissions budgets in legislation and establishing the Commission.
- 3.6 Westpac notes that the Coalition Statement and the Westpac Group's Climate Change Position Statement and 2023 Action Plan both refer to GHG emissions reduction targets that are consistent with keeping within two degrees of warming above pre-industrial levels. Since these documents were released, Westpac has reviewed and accepted the conclusions of the IPCC's Special Report released in 2018 'Global Warming of 1.5°C'. Westpac supports operating in a manner consistent with limiting global temperatures to less than 1.5 degrees above pre-industrial levels.
- 3.7 Westpac's investment arm, BTNZ, has also committed to align all assets under management with a 1.5 degree target and meet net zero GHG emissions by 2050 or sooner. To showcase its commitment to tackle climate impacts, BTNZ was the first New Zealand manager to join the Net Zero Asset Manager's initiative.

General comments in relation to the ERP Discussion Document

- 3.8 Westpac considers that there is a much broader range of options for decarbonisation than is set out in the Discussion Document. In particular, Westpac notes that there appears to be variation in the level of detail contained in the ERP across different sectors, suggesting that planning on sector-specific decarbonisation needs to be advanced in line with the scale and urgency required to decarbonise New Zealand.
- 3.9 The Discussion Document seeks detailed input and feedback across a range of issues in a relatively short period of time. However, the Discussion Document lacks specificity and in some areas does not respond to the comprehensive advice provided by the Commission. While Westpac understands and acknowledges the urgency of the task, the timeframe given for providing substantive input on the ERP is challenging. In this context, Westpac considers that further consultation and sharing of detailed insights to develop a comprehensive plan would be beneficial. Westpac would welcome the opportunity to work with MfE further in this regard.
- 3.10 Westpac also notes that there is a substantial body of work relevant for the development of the ERP, in particular the Commission's Advice to Government (including extensive contributions made through that consultation process), the Sustainable Finance Forum Roadmap for Action and/or the previous report prepared by the Productivity Commission, which may be useful for MfE to draw from in shaping the ERP.

### Climate Change Commission advice to Government

- 3.11 Westpac acknowledges the Commission's conclusion that the transition is achievable and affordable, while offering significant co-benefits. Westpac recognises the commercial opportunity inherent in the transition to net zero, including making New Zealand's economy more efficient and has the potential to profoundly improve New Zealand's overall wellbeing. Conversely, failing to decarbonise in line with 1.5 degrees poses significant downside risks to New Zealand, not only in the form of physical impacts, but in financial risks to our export sectors through loss of market access and/or failure to meet changing consumer preferences. Westpac also agrees with the Reserve Bank's assessment that climate change poses risks to the stability of New Zealand's financial system. While Westpac acknowledges the cost of transition, it is primarily viewed as an essential investment in New Zealand's future.
- 3.12 Westpac agrees with the Commissions view that and over-reliance on overseas mitigation carries significant risks. Westpac supports New Zealand's focus on reducing gross emissions as much as possible. We note in particular that credible offshore emissions reductions may not be as readily available or may not be as cost-effective in the long-term, and do not generate the considerable economic, social and environmental co-benefits of domestic decarbonisation. However, there is also opportunity to support developing countries, especially in the Pacific, in their efforts to decarbonise and/or develop nature-based solutions that generate wider social and environmental benefits for these communities. Westpac recommends that the use of offshore mitigation is regularly re-assessed against a broader range of risks and opportunities (beyond cost), which must be carefully balanced.
- 3.13 Westpac also supports the introduction of a robust mandatory climate disclosure regime, recognising that as banks benefit from detailed disclosures that enables them to understand their own risks inherent in their lending to customers exposed to climate-related risks and opportunities. For Westpac, understanding climate-related risks forms the foundation for integrating emissions reductions pathways into our long-term strategy. Supporting customers to manage their climate-related financial risks inevitably leads to a redirection of capital towards more sustainable purposes, be it financing adaptation initiatives in the Agricultural sector (managing physical risks) or financing the purchase of low-emissions assets (managing transition risks).

### The need for urgent change and ongoing collaboration

- 3.14 Addressing climate change is a matter of urgency. Maintaining global warming to 1.5 degrees from preindustrial levels requires significant emissions cuts over the next decade. The ERP must reflect this urgency and an ambition to potentially exceed current emissions budgets where possible to increase the likelihood of keeping global warming within 1.5 degrees and maximizing wider cross-benefits. Westpac believes that our collective understanding of the issues and range of well-established and readily available solutions provide a strong basis to accelerate decarbonisation efforts with urgency, while optimizing our plans in parallel.
- 3.15 We note that the calculation of further emission reduction is based AR4 methodology and the emission budget on AR5 methodology. We recommend using AR5 or higher consistently.
- 3.16 From its experience as a large and complex business, Westpac understands that a challenge as complex as climate change requires efforts across the entire organisation. This is not a task a small group of subject matter experts can address in isolation. As such, Westpac supports taking an "all of government approach" as recommended by the Commission and set out in the ERP, highlighting the need for centralised co-ordination and leadership. Westpac also supports the SBC's recommendation of a central unit within the Department of the Prime Minister and Cabinet to oversee the government's climate change response.
- 3.17 Effective partnership between businesses, government and the community are a key part of addressing the climate crisis. The establishment of the Aotearoa Circle and Toitū Tahua provide ideal forums for ongoing engagement between government and the financial sector. Partnership must go beyond consultation, and aim for co-development to leverage expertise and capacity across the wider system.

### 4. **RESPONSE TO CONSULTATION**

4.1 Westpac's response to the specific sections of the Discussion Document are outlined below.

### Aligning systems and tools - Funding and Financing.

- 4.2 Finance is critical to achieve New Zealand's transition to net zero. The Commission's advice concluded that, particularly in the early stages of the transition, most low emissions assets require higher upfront investment compared with high-emitting equivalents. This presents a finance challenge for affected business and individuals. At the same time, low emissions assets are lower in operating costs, effectively paying for themselves over time, making finance challenge solvable. However, this shift requires changes in the availability and quantum of different forms of capital, ranging from equity, grants to different forms of finance.
- 4.3 While banks are critical providers of capital in New Zealand, some investments will not fit the risk profile of trading banks. Understanding the required capital mix by quantum, risk profile and timing is critical to quantify the finance task on the banking sector and identify the challenges in meeting it. This would assist identifying gaps in the mix of available capital and avoid crowding out private sector finance through public finance providers which may be better positioned to mobilise private capital through the use of more catalytic instruments (e.g. shifting from grants and loans to guarantees, first loss equity etc).
- 4.4 We consider the development of climate risk disclosure standards as a critical tool to enable measurement of GHG emissions throughout an organisation's supply chain. Over time, this can also

become a catalyst for reporting entities' emissions reductions in line with net zero emissions by 2050. Westpac recommends that the government encourages smaller organisations to undertake reporting aligned with the climate standards developed by the External Reporting Board (**XRB**).

- 4.5 The ERP rightly identifies the need for a "step change in how we approach financing" and sets out critical aspects of that change. To achieve those outcomes, Westpac recommends the development of a Transition Finance Strategy which should cover:
  - (a) Providing a credible estimate of the total investment required to achieve New Zealand's transition to net zero would assist business and providers of capital to quantify the scale of the commercial opportunity and the overall finance task. Based on the extensive economic modelling undertaken by the Commission and reports prepared in other jurisdictions, Westpac considers that a credible estimate can be achieved, combining the capacity and capabilities of the private and public sector. This will not only indicate the overall scale of the task but also illustrate the commercial opportunity.
  - (b) Developing an understanding of the different types of investment required provides a high level of understanding of the necessary capital mix. For example, investment in infrastructure is generally the domain of government although private-public partnerships may provide options to amplify government funding. Research and Technology commonly attracts a mix of government grants, equity and/or venture capital. The scaling of known and mature decarbonisation technologies could fall within the parameters of bank finance. Breaking down the funding task over time will identify the capital needs from the different sources, attributing parts of the overall funding task to different capital providers.
  - (c) Understanding the quantum of available capital across all relevant types of capital will identify mismatches, gaps and potential barriers to meet the funding needs.
  - (d) Having an understanding of the demand and supply side of transition capital will enable providers to tailor funding solutions to address gaps, optimise funding costs and develop innovative ways to transfer and mitigate risks for some of the more challenging initiatives(for example, the adoption of relatively new technologies with limited track record). This could include co-investments between government and the private sector, as well as the development of innovative risk-transfer or risk-sharing instruments.
  - (e) When drafting any such transition plan, it would be useful for the Commission to review and incorporate recommendations from the Mōhio Climate Finance Landscape for Aotearoa and key elements of the Sustainable Finance Forum's Roadmap for Action as well as the EY Net Zero Southland Economic Mitigation Pathways.
- 4.6 This Strategy it is not a pre-requisite to transform the financial system, but would greatly support and supplement ongoing work across New Zealand's financial system and help accelerate the shift of capital towards more sustainable purposes.

### Question 24: What are the main barriers or gaps that affect the flow of private capital into lowemissions investment in Aotearoa?

4.7 Westpac is one of the main contributors to the Sustainable Finance Forum's Roadmap for Action. In 2020 this report set out eleven high level recommendations to support the creation of a sustainable finance system by 2030. While some progress has been made (e.g. on mandatory climate disclosures) many of the recommendations remain current across the three core areas laid out in the roadmap.

Westpac recommends that key recommendations from the Roadmap for Action are integrated into the ERP, in collaboration with Toitū Tahua.

- 4.8 There is a need for access to high quality climate change data and information to not only enable comparable and credible disclosures but inform finance strategies at an individual customer level. Westpac recommends that government considers the role of Crown research agencies in the provision of climate change data.
- 4.9 It is also important that common and robust (sustainability) standards are developed encourage investments and finance for positive environmental outcomes. A "common language" around key elements of sustainable finance would support customers' understanding as well as support effective regulatory oversight. The Sustainable Agri Finance Initiative provides an example of such standards and a showcase for effective cross-sector cooperation, working with regulators and central government to accelerate sustainable finance in the agricultural sector.

### Question 25: What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?

- 4.10 Westpac is aware of a variety of challenges Māori collectives face in accessing capital as many elements of our current financial system do not accommodate cultural and spiritual aspects important to Māori. As the financial eco-system matures in its approach to support sustainable finance for Māori and Iwi, those that are already helping Māori and Iwi to access sustainable finance are witnessing Iwi and Māori -led projects that enable mana motuhake financial sustainability with cultural values as the foundation of decision making for their people such as Te Karearea, Matai Pacific, and Te Pūkenga.
- 4.11 Through relationships with partners like government, lwi, Māori organisations, communities, nongovernment organisations and private companies, working together to understand the views and challenges that we face will ensure that solutions are based on a collective view and will start to drive change. I orea te tuatara ka patu ki waho - A problem is solved by continuing to find solutions.

### *Question 26: What else should be the Government prioritise in directing public and private finance into low-emissions investment and activity?*

- 4.12 Although much of New Zealand's decarbonisation pathway can be achieved with known technologies, rolling those out at scale can present challenges for bank finance. Government could play an active role in the partial transfer of risks that fall outside the risk parameters of banks. This could involve technology risk underwrites or long-term uptake agreements for low emissions assets that do not amortise within the terms of bank finance. It could also involve other types of blended finance products to increase protection against climate change impacts. For example, structuring projects to crowd in private market participants such as for natural protection through mangroves, large scale carbon sequestration projects or reforestation.
- 4.13 The NZ Green Investment Fund (NZGIF) should target areas not well covered by existing capital providers to avoid "crowding out" private sector capital. In other words, NZGIF should not compete with private market, but supplement it. Generating a commercial return for its investments does not necessarily create barriers. More often it is the access to the appropriate type of capital at acceptable conditions that enables investments that fall outside the parameters of conventional trading banks.

### Questions 27: Is there anything else you wish to share in relation to funding and financing?

- 4.14 As part of its climate risk disclosure obligations banks and asset managers are expected to report on financed GHG emissions (i.e. Scope 3 emissions). Banks are able to estimate financed GHG emissions based on sector-specific emissions factors. However, only accurate and credible emissions data and wider climate metrics at a customer-level enables banks to capture real-time emissions reductions achieved by its customers, which in turn incentivises the provision of bank finance for decarbonisation of individual customers. It is therefore important that small and medium size business have to ability to measure their emissions in a credible, yet cost-effective way. Government can play an active role in requesting companies to utilise consistent reporting and adopt the format of the climate standard developed by the XRB.
- 4.15 Capturing financed GHG emissions with residential and commercial real estate lending is currently highly dependent on fairly crude sector level estimates. These estimates are generally not suitable to capture improvements to the emissions-profile of individual properties. Westpac supports the introduction of mandatory energy efficiency standards and ratings for buildings, in conjunction with central repositories (e.g. digital Land Information Memorandums) from which these are accessible to the public. This would promote energy efficient houses and allow banks a more granular and accurate assessment of financed emissions. This in turn could create incentives for finance solutions targeted at improved energy efficiency of new and existing buildings.

### Transitioning Key Sectors.

4.16 Westpac believes that the necessary transition requires New Zealand to pull all available levers. This includes transformational changes in some sectors such as transport, energy, building and construction, agriculture, waste and forestry. Through its role as financial service provider to these sectors, Westpac is able to offer some perspective on how climate positive changes can be made in these sectors, as well as leveraging industry expertise in the SBC and its submission on the ERP.

### TRANSPORT

- 4.17 Westpac supports SBC's recommendations in relation to the transport sector, in particular the suggested restrictions on ICE light vehicles entering the New Zealand market after 2032. While it is considered likely that global car manufacturers will move rapidly towards low/zero-emissions vehicles, it is important to avoid becoming the "dumping ground" for used ICE vehicles. Westpac also supports the initiatives recommended in the SBC Low Carbon Freight Pathway to keep a 50% reduction in emissions by 2030 and net zero for the sector by 2050 within reach. Westpac notes that current freight management practices would result in a 40% increase in freight emissions between now and 2050.
- 4.18 Westpac supports a stronger emphasis on a mode shift in New Zealand's car-centric transport system. Active modes of transport in particular reduce infrastructure costs and have significant co-benefits. This should be a priority in integrated land-use, urban development and transport planning.
- 4.19 As set out in Westpac's previous submission to the Commission, the ERP should explicitly seek to reduce the overall number of private vehicles. This can be achieved through mode shift, improved public transport and/or innovative ownership models (e.g. car sharing). While the embodied emissions in cars do not count towards New Zealands' emissions profile, reducing the number of vehicles would also assist with the expected supply constraints for electric vehicles over the next decade. In recent years, Westpac achieved a significant reduction of its corporate vehicle fleet which reduced overall cost and improved vehicle utilisation.

- 4.20 Westpac notes the reliance on some new technologies in the transport sector, in particular in the freight space. As set out above, relatively new technology can present challenges in obtaining bank finance. Funding for these types of assets could be amplified through innovative risk transfer mechanisms.
- 4.21 The higher upfront cost of low emissions transport asset may result in longer return periods. Short-dated contracts in the public transport sector could act as a barrier to the adoption of low-emissions assets such as electric busses or ferries. Consideration should be given to adjusting contract terms and/or introduce risk-transfer mechanism that incentivise a replacement of conventional assets with low emissions alternatives.

### ENERGY AND INDUSTRY

- 4.22 Westpac supports the government's ongoing commitment to phase out all coal boilers across its asset base by 2025. Westpac recommends the government also phase out coal boilers across assets it manages as well as phase out all diesel and gas boilers by 2030. It is also important to highlight the potential for the expansion of biofuels and the drop in biofuels on farms, in vehicles and other forms of transport such as aviation and shipping.
- 4.23 Westpac agrees with the Commission that reaching at least 50% of primary energy consumption coming from renewable sources by 2035 should remain the key target. This provides more decarbonisation pathways for industries during the transition and captures more of New Zealand's emissions than a 100% renewable electricity target. The 50% primary energy target will also be better suited to balancing other critical factors such as energy security and affordability, that will provide the right incentives for the uptake of lower emissions technologies and investment in new renewable generation capacity.
- 4.24 There are long lead times in the construction of new renewable generation capacity, in part due to the consenting process for new projects. Regulatory reforms (including that of the Resource Management Act) may assist with an increase in renewable generation capacity.
- 4.25 There are several initiatives being undertaken to help decarbonise the energy sector, including the Electricity Authority's review of regulatory settings to help encourage additional renewable generation connections and the Government Investment in Decarbonising Industry (GIDI) fund. It will be critical that key learnings are implemented in setting the pathways for a lower carbon energy sector. Westpac supports the SBC's recommendation to consider expanding the scope of the GIDI fund to support smaller businesses.
- 4.26 Biofuels will have a role to play in helping to decarbonise the transport sector by reducing the emissions footprint for vehicles that will not be able to move away from fossil fuels in the near term. We will be interested in the outcome of the biofuels mandate and what role this will have in transforming New Zealand's liquid transport fuel market.
- 4.27 It is possible that hydrogen may play a role in energy markets, albeit there are physical and economic challenges that will likely limit this fuel to specific uses in the near term. Sufficient consideration must be given to instances where alternative fuels/feedstocks are not practicable or as effective or efficient (e.g. methanol production and high/medium temperature process heat in locations where biomass is not readily accessible).
- 4.28 Westpac acknowledges that government and industry are best-positioned to set appropriate thresholds for the Energy and Emissions Reporting scheme. These thresholds should be set at a level that captures the majority of emissions, while targeting businesses adequately resourced to capture and report this

data. It may also want to consider a voluntary scheme for businesses below this threshold and provide support to assist with this data capture. This could also assist banks in more accurately capturing the emissions intensity of their lending and better target sustainable finance solutions.

#### **BUILDING AND CONSTRUCTION**

- 4.29 Westpac supports SBC's submission in relation to the building and construction sector. In particular, mandating energy efficiency ratings such as NABERSNZ would assist banks in more accurately capturing the emissions intensity of its (commercial property) lending and could incentivise sustainable finance solutions for the commercial property sector.
- 4.30 The benefits of a Warmer Kiwi Homes programme are obvious and cross-cutting. As set out in the Funding and Finance section, Westpac supports the introduction of mandatory energy efficiency and GHG emissions ratings for residential buildings. Energy efficiency ratings raise awareness of costs through the lifecycle of a building and as such can be an effective tool for broader behaviour change. Westpac recommends that government works with local authorities, industry and the New Zealand Green Building Council to develop efficient mechanisms for introducing robust energy efficiency ratings, ideally in a format that is easily and digitally accessible to enable accurate measurements of the emissions-intensity of New Zealand's building stock.
- 4.31 Building Codes that are regularly updated and that favour low GHG emissions, waste and energyefficient methods (including requirements for electric vehicle charges and bike racks within any new public building) would contribute towards low-emission buildings, including embodied emissions.
- 4.32 A transparent and consistent pipeline of public construction would also help the construction sector to invest in precision technology to deliver off-site manufacturing systems at scale. This would not only reduce construction cost, increase sector capacity and improve overall quality, but significantly reduce construction waste.
- 4.33 Government should give further consideration to policies that encourage large scale and long-term investment in high-density residential rental properties, i.e. build to rent. These long-term investment models incentivise energy efficiency through the entire lifecycle of a building, while potentially creating scale to support more efficient off-site construction methods.
- 4.34 Westpac believes that significant decarbonisation opportunities exist in the increased use of engineered timber products and recommends that government investigate synergies between forestry, biofuel and timber construction. In this context Westpac endorses SBC's recommendation to give stronger emphasis on embodied emissions in buildings.

#### AGRICULTURE

- 4.35 Westpac supports SBC's call for more research and development funding, highlighting the need to broaden the research focus to a wide range of potential emissions mitigation innovations. For example, biofuel on farms have been adopted throughout the world for the last twenty years and is a developed technology ready to be adopted across New Zealand. There is also ongoing work in relation to the cultivation of red algae, which has shown some potential to reduce methane emissions in ruminant animals.
- 4.36 In addition, Westpac supports the direction of He Waka Eke Noe, noting that many emissions-reduction options (such as changes to farm management systems) are readily available and if adopted

consistently – could reduce the sector's overall emissions profile. There does not appear to be any reason to delay the roll out of such initiatives.

### WASTE

- 4.37 Westpac supports the SBC's submission in this regard, in particular the call for education and behaviour change of households and businesses. Westpac is supportive of New Zealand's work on incorporating energy generation technologies within wastewater, landfill and other waste treatment systems throughout the last thirty years and encourage to continue to adopt relevant processes including generation energy from biowaste. We recommend applying the MfE waste hierarchy principles.
- 4.38 There are some promising waste-water treatment technologies overseas, including for example algae cultivation technologies trialled in Canada which demonstrated potential to convert CO2 into oxygen, while producing biofuel and animal feed. While Westpac is not in a position to opine on the scientific and technical merit of these technologies, such examples highlight the significant potential for innovation in the waste space and a need for a supportive research and development environment to further advance potentially viable innovations.

#### FORESTRY

- 4.39 Westpac supports SBC's submission in relation to forestry, in particular the call for policy actions to encourage native planting, in particular on marginal farm-land.
- 4.40 Westpac is also supportive of Te Uru Rakau's proposed biofuel industry<sup>1</sup>. This includes the development of a more holistic approach to forestry with the view of utilising timber products on shore to reduce New Zealand's emissions, e.g. as building material. Westpac also believes that developing capacity and capabilities in the building sector (e.g. engineered timber) and for biofuels is an important component to support the growth of this sector. Westpac believes that the current forestry model (export of raw timber) does not maximise the potential economic and environmental co-benefits of forestry, which is required to meet our net emissions reductions targets.

<sup>&</sup>lt;sup>1</sup> <u>Te Uru Rākau – NZ Forest Service explores biofuels as a major opportunity for New Zealand | NZ Government (mpi.govt.nz)</u>

He rau ringa manaaki. Many hands working together.

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Whangarei District Council (WDC) are pleased to submit on the Emissions Reduction Plan published in October 2021 by the Ministry for the Environment.

WDC recognise that local government has an important role to work together with central government towards our national emission reduction targets and to support resilience with hapū, our local communities, commercial and private sector to transition to a low emissions future.

WDC can lead by example to achieve a low emissions transition by:

- aligning with national emissions targets,
- establishing measurement and reporting processes,
- implementing actions.

WDC recognise our role in leading, supporting and coordinating Whangarei's transition to a low emissions society through regulatory and non-regulatory functions. Relationships with tangata whenua, iwi and hapū partners, local communities and businesses will be essential in transitioning to a low emissions future.

Here are some key points WDC would like the Ministry for the Environment to consider when setting future legislation and policy.

- We have a high proportion of Maori from the 2018 Census, 30% of the Whangarei population is of Māori descent and relatively few Treaty of Waitangi settlements with the Crown.
- Our hapū partners seek a partnership as envisaged by Te Tiriti o Waitangi and recognising He Wakaputanga o te Rangatiratanga o Nu Tireni.
- The Whangārei District has experienced significant population growth over the past 20 years. The population has grown from 70,000 in 2000 to 98,300 in 2020.
  Population projections anticipate over the next 30 years the Whangarei population will exceed 140,000.
- Whangārei has a widely dispersed population. Approximately 20% of our population are located in coastal and rural settlements.
- The Whangārei District mobility and connectivity are heavily road and private vehicle dependent. We have limited public transport and low patronage and limited rural electric vehicle infrastructure. Census data shows 94% of the population use private vehicle as their primary mode of transport. Though, active transport infrastructure within the urban areas have high patronage.
- The New Zealand Index of Deprivation shows Te Tai Tokerau has large disparities in income and average wage, access to health services and access to infrastructure services. Māori are disproportionally represented in deprivation statistics.
- Housing stock within Te Tai Tokerau is not conducive to a low emissions future. The housing stock requires a lot of heating, is damp and mouldy, is draughty and loses heat easily. In 2018, Te Tai Tokerau was identified as the region with the highest proportion of damp homes. Maori and Pacific peoples are more likely to live in home affected by dampness or mould than other ethnic groups and low income households are more likely to experience dampness and mould.



- Main contributors to our gross domestic product are manufacturing and primary industries which are sensitive to carbon pricing and any future biogenic methane pricing. This raises transition risks for these industries and the communities that serve them.

This submission provides input from a local government context to help build greater understanding of the unique challenges in achieving a low emission and equitable future.

### **Consultation Question Responses**

## 1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above the correct ones? Please explain why or why not

WDC are generally supportive of the guiding principle approach.

It is recommended Te Tiriti o Waitangi should be the foundational principle which overarches the guiding principles. Upholding Te Tiriti o Waitangi directly influences how the other guiding principles are incorporated across the emissions reduction plan. In Whangārei, our hapū seek a partnership as envisaged by Te Tiriti o Waitangi not the Treaty of Waitangi and recognising that Te Tiriti reaffirmed the foundations of He Wakaputanga o te Rangatiratanga o Nu Tireni. It is important that reference to the Articles of Te Tiriti o Waitangi is made, as opposed to the principles.

WDC also recommend an additional bullet point for the guiding principle 'Upholding Te Tiriti o Waitangi'. Include the following bullet point.

• Working towards a governance structure that supports Maori/hapū partnership.

## 2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

As acknowledged across the emission reduction plan, there will be a transitional period for all communities including the private sector. Additional support and incentivisation in the initial transition period will be required for the private sector. This includes:

- Promoting education pathways for existing staff to support their low emissions journey
- Moving ecofriendly solutions that supports and aligns with the proposals for the new waste strategy
- Encourage government agencies and businesses to support working from home initiatives.
- Additional marketing exposure for those businesses complying with emission reduction guidelines.

### 6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

### Retiring wetlands

Retiring of drained wetland from farming enabling return to wetland and supporting the repo to undertake its natural process which helps with flood management, restoration of mauri,



sequestration of carbon, enabling the water cycle to move as intended and nutrients to move through soil as intended. Guidance on how to enable this transition where it effects current farming operations will be required.

### Transport fleet and connectivity

In Whangarei, there is an ageing light vehicle fleet. WDC recognise and support the early work in supporting households in transitioning to a low emissions fleet through the Clean Car Discount. However, it is considered Clean Car Discount is inaccessible to those lower income families. Without action to remedy the situation, this will subsequently cause further inequalities for those lower income households.

Our rural and coastal communities face unique challenges with transport connectivity with infrastructure and income constraints. Our rural and coastal communities are more susceptible to environmental changes with often only one direct route in and out into these remote locations.

WDC suggest more conversations are needed to with our hapū and our coastal and rural communities to understand these constraints and to include these communities in future solution setting.

Our rural and coastal communities face unique challenges with transport connectivity, and reliance on private vehicle use. There is currently no clear guideline or planning in place to ensure these communities are a part of the solution. Our rural and coastal communities are more susceptible to environmental changes with often only one direct route in and out into these remote locations.

Reducing rural and coastal communities need to travel is another step to reduce future climate risks. Other targeted infrastructure investment such as improving internet connectivity and supporting food production initiatives should be included in the rural response to emissions reduction.

# 8. The Climate Change Commission has recommended that the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. Which, if any, of the strategies listed are a particular priority for your whānau, hapū or iwi and why is this?

From a Whangarei context and the ongoing conversations that are being had with hapū, prioritisation of a National Energy Strategy is necessary for their climate responses and to promote self sufficiency of our rural and coastal communities.

The proposed National Energy Strategy provides an opportunity to deliver on other economic and social aspirations for hapū. WDC would suggest a strong rural focus is critical to the efforts to transition into more sustainable energy sources. Funding and or additional publicly available funding sources for hapū to support solar initiatives would be a first initial step.

Engagement with Te Rarawa outlined strong support for initiatives that help deliver a Circular Economy. There is strong interest in circular and localised economy.

Other engagement Te Orewai provided strong support for localised infrastructure. This would provide a sense of ownership when it is owned locally and driven by the community. It would also result in less infrastructure miles and less food miles.



Hapu have also expressed strong interest in sequestration initiatives within the marine environment eg Patuharakeke project in collab with NIWA. Regenerative projects are a strong priority in alignment with emissions reductions.

## 11. What information would your Māori collective, community or business like to capture in an emissions profile? Could this information support emissions reductions at a whānau level?

Through WDC's ongoing conversations with our hapū partners, they have outlined the following opportunities:

- Account for sequestration opportunities and the economic benefits of retiring farmland back to wetlands.
- Account for emissions sequestered by indigenous and often ancient forest/bush and recognise the wider community / national / global benefit by providing an economic benefit to the hapu / landowners.
- Incorporating a biodiversity credit to support biodiversity outcomes. References include:
- i Toha: <u>https://www.toha.nz/</u> Referred to by Te Rarawa
- ii Tahi Honey: https://tahinz.com/sustainability-biodiversity/

### Equitable transitions strategy

### 16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

### Low emissions transport

Supporting low emission transport options that fulfil the community's needs is essential. This is vital because we are rural and dispersed and have commuters and school children moving in and out of the urban area. Subsidised public transport at a time and frequency that suits the community is seen as a way to support and encourage the use of multi modal transport options.

Continued focus on funding and supporting multi modal transport options including shared paths for walkers, traditional cycling and electric cycles and scooters.

### **Construction sector**

Other opportunities to support low income households emissions footprint and economic status includes timber to be milled and processed in New Zealand, not sent offshore so that its available for construction.

Review of standards to provide a range of building methods and materials to support and promote low emission building.

### 17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

This is a key issue for Whangarei with the recently confirmed move to transition the Marsden Point refinery site to an import operation. Work is required to support workers now on finding alternative work and retraining within the region.

### 18. What additional resources, tools and information are needed to support community transition planning



Conversations had with key industry sectors and the private sector outlined additional risks associated with training and education of new employees. In efforts to move workers towards low emitting industries, there will be a transitional period across sectors.

Financial and other marketing incentives for those businesses that are supportive of education and training pathways is the first step. Conversations had with the construction sector has highlighted an unwillingness to support training initiatives.

WDC suggest stronger procurement guidelines for future infrastructure projects is a step to improve the private sectors willingness to support education and training opportunities.

### Government accountability and coordination

## 21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

The Zero Carbon Act is currently the strongest tool for our communities to hold both central and local government accountable in ensuring progress is being made to the net zero target by 2050.

Accountability towards central government's decisions on climate action is also directed by our international obligations through the United Nations Framework Convention on climate change (UNFCCC) Paris but also the need to show clear leadership for those other Pacific states who are experiencing the consequences of inaction. This level of accountability is yet to be seen across local government.

### 32. Are there any other views you wish to share in relation to emissions pricing?

Commentary from our rural farming community has been supportive for new support packages to assist the agricultural sector to properly engage in the ETS.

### Planning

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

WDC recommend additional funding mechanisms and new funding streams to be made available for local government. This includes funding models that local government could administer to support action by the community for initiatives such as green infrastructure and adaptation responses.

Funding mechanisms available to support Councils to reduce their own emissions should be enduring and sustainable. Funding will enable Councils to lower their emissions quicker than what the Long Term Plan cycle enables.

34. What more do we need to do to promote urban intensification, support low emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?



### Infrastructure barriers and perceptions of planning

Intensification and development outcomes will generally be driven from the private sector if the market meets certain profitability percentages. The Whangarei District Plan allows for high densities and yields to be achieved across our urban environments, which is supportive of the National Policy Statement on Urban Development. While supported and enabled in the District Plan, low development rates are still a common theme for the Whangarei city centre and other urban areas. Analysis undertaken from WDC concluded other market factors including:

- increasing cost of development and
- low revenues
- other land constraints

are the main drivers that are impacting on intensification outcomes rather than any density requirements or design rules which is affecting feasibility of residential development. A focus on providing core infrastructure and additional funding sources to plan for longer term flooding risks would help to improve the private sectors willingness to invest in other typologies such as apartments and townhouses.

### Urban design outcomes

Urban design outcomes for new residential development which is proven to reduce total energy use at a household level is not to be seen. And while, the RMA Amendment Bill is specifically targeted at tier 1 Councils, if implemented to tier 2 councils, this would increase difficulties for tier 2 councils to plan for growth and investment into transport infrastructure.

### Recommendations

WDC are recommending the following solutions to promote urban intensification and improve confidence of the private/commercial sector.

- Data collection plays an important part to improve development confidence particularly in those rural cities who are transitioning into other dwelling types such as apartment and townhouses. Information and relevant case studies on how to manage development challenges associated with land and environmental constraints provides an opening to promote intensification opportunities.
- Guidelines for developers on how to manage coastal and flooding risks highlighting intensification in difficult development conditions is achievable.
- Implement green infrastructure in the urban environment including wetlands and trees to offset the impacts of heat sinks and flooding in the urban area.

### Behaviour change - empowering action

### 42. What information, tools or forums would encourage you to take greater action on climate change?

WDC supports a coordinated approach to behavior change. Understanding the emissions profile of goods and services could assist in the education of communities, iwi/hapu groups and businesses.



### Circular Economy

## 45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

Extended Producer Responsibility is a vital first step in the path to a circular economy. Implementing extended producer responsibility schemes and product stewardship could be funded by industry and systems copied from other jurisdictions abroad. Schemes around the world have shown that the disposal and recycling costs for items like clothing, mattresses, packaging, e-waste, etc. should not require funding from ratepayers.

Ministry for the Environment's current timeframe for implementing schemes will not help to achieve many circular economy gains by 2030. There needs to be more impetus given to putting schemes in place sooner than the current proposals, lack of data and consensus should not be used as reasons not progressing with implementation.

Whilst the financial responsibility for dealing with products end of life costs are borne by ratepayers it will be very difficult for industry to justify the business case for investing in alternatives.

## 48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

Work should begin immediately on the design of product stewardship schemes for the already identified "Priority Products" (for plastic packaging this has not yet started). An extensive list of "priority products" should be developed so that industry can begin the process of scheme design and planning.

## 50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

"Duty of Care" regulations setting out responsibilities for those disposing of waste should be a priority. "Duties of Care" could be a fundamental part of the system for preventing bad practice, encouraging good practice and also gathering data and waste levy revenue.

A National Environmental Standard for "Disposal to Land" would be another regulation that should be a priority. As long as cheap disposal of waste to land is an acceptable solution then investment in alternatives will be difficult to justify.

### 51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

If we make all the proposed changes but resource consumption continues to increase, the environment will not be restored. The rate of consumption of resources needs to be reduced as well.



### Transport

## 52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

WDC is generally supportive of the target to reduce VKT by cars and light vehicles by 20 per cent by 2035.

WDC are supportive of the alignment in urban planning policy setting such as the National Policy Statement on Urban Development and transport target setting. Where people choose to live, work and play will determine private vehicle use.

The solution in working towards this target is providing our communities with alternative transport options. The limited funding availability for local authorities often focuses new transport opportunities to those growing urban environments while unable to meet the needs of our rural communities.

There is a perceived lack of planning and action setting for rural and coastal communities to reduce their vehicle kilometres. For our rural and coastal communities, this is a larger conversation than transport outcomes.

Opportunities to reduce rural and coastal communities need to travel include:

- Other infrastructure investment including telecommunications and healthcare to make rural and coastal communities more self-sufficient.
- Provision of shared paths for safe cycling options. This often requires expansion of road corridors, changes in stormwater management. Due to the location and topography of many rural roads this is not easily achieved.

### 53. Do you support the target to make 30 per cent of the light vehicle fleet zeroemissions vehicles by 2035, and the associated actions?

WDC are generally supportive of the proposed target. Being a widely dispersed District who are historically reliant on private vehicle use, setting action and achieving the proposed targets are a crucial element to working towards emissions reduction.

WDC recommend the 30 per cent target needs to be broken down into shorter timeframes to ensure central government targets are consistently being held to account.

### 57. Are there any other views you wish to share in relation to transport?

WDC have expressed concern the proposed transport related actions and targets do not provide enough detail and planning for both modal shift and transition into light vehicle fleet zero-emissions vehicles. The options provided are focused on large urban areas which are acknowledged where most of the benefit will be. The effort and costs to reduce by 20% by region may not be achievable by rural focused communities.

Relief sought from WDC includes:

#### Transport for coastal and rural communities.

- As outlined across the submission, Whangarei has a widely dispersed population with 20% of the population being located in rural and coastal communities. In efforts to service our rural and coastal communities while working towards emission



reduction targets, privately delivered Mobility as a Service (MaaS) options could be a good approach for providing services to rural areas and small towns.

- The public transport model in its current structure is not fulfilling the needs of our population and therefore not reducing private vehicle use.
- Numbers of cars per household
- Improving infrastructure to enable working from home and reducing kilometers travelled.
- WDC strongly feel the Emissions Reduction Plan does not provide an adequate plan on supporting rural and coastal communities to low emission transport options.
- Taxing or cost aligned to kilometers travelled is not an equitable solution to reducing miles. Many of our communities especially Maori, where they are located on ancestral lands, do not have a choice of where they live and therefore need to travel to receive goods and services.

### Aligning intensification and transport outcomes together.

- WDC recommend implementing tier approach for local authorities, similar to the approach outlined in the National Policy Statement on Urban Development.

The recommendation aligns population growth, intensification outcomes and infrastructure together for our urban environments. The recommendation provides a clear direction on local governments responsibilities to improve public transport services.

### Transport targets.

- WDC are supportive of additional targets for walking and cycling to areas of destination.
- This is a target that has multiple benefits for the community.

### 30 minute city.

- WDC are advocating for central government to consider how further support can be provided to local government to better align employment opportunities with residential and transport connections.

### Building and Construction

## 70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

WDC supports the use of energy performance programmed where there is a clear purpose for the information. AS well as monitoring there needs to be targets and potentially assistance for local government to reach these targets. Programmed to reduce electricity use through behavior change can be easily implemented. Changes to buildings to improve performance can be cost prohibitive to local government. The impact of the loss of three



water assets from the balance sheet will the ability of local government to raise funds for capital works.

### 71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

Encouraging good practice by promoting Green Star or other green building standards through financial incentives for developers.

# 76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

Much of the construction industry uses standards often developed by the product suppliers. That are then built into consent conditions and methods. Organisations such as BRANZ used to play a role in ensuring standards were fit for purpose. A similar role could ensure industry is taking account of the emissions budget in design and product specification.

### Waste

## 89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

Yes – who is responsible for meeting the target and what are the consequences of missing it. What are the interim targets required to track progress. A lot of biogenic methane emissions are locked in years in advance.

It would be good to see the assumptions in the modelling that is behind the target to 'Reduce biogenic waste methane emissions by 40% by 2035'. The vast majority of organic waste sent to 'managed landfill' goes to sites with very small Unique Emissions Factors – reducing the emissions by 40% could be technically unachievable. Using the IPCC reporting assumptions for making policy and setting targets is probably putting too much confidence in the IPCC reporting assumptions.

Organic waste is not supposed to be disposed of to land at anything other than a Class 1 or 2 site. Legitimate Class 2 sites probably do not exist outside of the Wellington Region - if a site is constructed to the required specification in the WasteMINZ guidelines then it will be taking a range of commercial waste which will by definition make it a Class 1 site.

There is a need to review the disposal facility definitions for example – the ETS definition of landfill site only applies to sites taking household waste whilst the WMA definitions covers a much wider range of sites.

### 91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

WDC are proposing the following policy initiatives to manage the impacts of higher waste disposal costs.

- Setting the expectation for increasing waste disposal levy over the next 20 years is needed to encourage investment in alternatives to landfill.
- An effective "Duty of Care" system for waste generators could be used to gather data and require separation of waste and appropriate disposal practices.
- National Environmental Standard for Disposal to Land.



- Defining "waste" and other terms consistently across legislation for example applying Emissions Trading Scheme obligations to all Class 1 sites not just those with household waste.
- Extended Producer Responsibility for all packaging, fashion, building materials and other many production sectors. A list of forthcoming Product Stewardship schemes beyond the current 6 priority products is required to be signalled so that work can begin on scheme design. These schemes should shift the cost of waste management from ratepayers to consumers and businesses.
- Increase GST to reduce the rate of increase in consumption. Extra revenue could be used to reduce land rates or income tax for low earners. Many European countries have a sales tax of 25%. (The IRD state that –"New Zealand relies heavily on income taxes in order to fund expenditure. Income taxes may, however, be harmful for efficiency and growth. Taxes on consumption, such as GST, tend to be less harmful to growth as, unlike income taxes, they do not apply to savings and, therefore, do not discourage this activity. A switch from income tax towards GST can, therefore, boost incentives to save and encourage economic growth.")
- Encouraging the charging of kerbside waste collection based on a pay per throw/ per bag system.

## 92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

Calls for landfill bans are increasingly being presented in the context of the circular economy, valuing resources, and, in the case of food waste, ensuring that quantities of food surplus and waste are put to good use. However, if we're to ensure that resources aren't wasted, we must ensure that the policy changes we call for are likely to bring about the effects we want to achieve. A landfill ban, even if it can be enforced, ensures only that the banned waste doesn't go to landfill, and says nothing about where it goes instead.

There are a few different options here, but in principle the policies need to encourage their best use within a circular economy. In the case of food waste this means redistribution to people where possible, followed by feeding food waste to animals, and finally, treatment of separately collected food waste via anaerobic digestion.

Investment decisions about waste disposal have a long horizon (landfills have a life of many decades and often require a decade of planning before opening) therefore if policies like this are to be implemented then they need to be developed now so that they can be fed into business case development.

### 93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

Rather than a ban consideration should be given to setting disposal levy rates based on the type of material and the potential harm it will cause rather than the facility that it is going to. The limited range of disposal options and large travel distances means that bans will create distortions in the market that are undesirable from an environmental and economic perspective.

There is evidence that bans are not a great policy tool:

- <u>https://www.nswai.org/docs/Landfill%20Bans%20Feasibility%20Research%20Final%</u> 20Report%20Updated.pdf
- https://ccme.ca/en/res/finaldisposalbansbmps-ensecured.pdf



### 94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

The NES for Air Quality already requires this for all sites of a minimum capacity. Sites that are much smaller than the NES specification are unlikely to have the depth of waste (over 10m according to WasteMiNZ guidelines) required to collect gas and will fail to produce enough gas to run a flare without importing natural gas to the site to keep the flare alight.

As per the WasteMINZ disposal to land guidelines:

"The generation of landfill gas is a complicated biological process that is affected by many factors including waste composition; waste placement history (age and depth of waste, use of cover and capping); moisture content; pH; temperature; and maintenance of the anaerobic environment within the landfill. Landfill gas control technology is relatively new and actual data from landfills that is both accurate and representative of the many underlying factors affecting generation is limited. Therefore, generation models are based on theory, relatively short-term data extrapolated over time, small-scale laboratory experiments, experience, or a combination of these. As a result, prudent engineering suggests that a degree of conservativism be included within the design of the gas management system."

## 95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

Garden waste should be composted within the garden – the collection and centralised treatment of this waste stream is a waste of resources. A garden waste collection service provided on a user pays basis by the private sector is more appropriate.

### 96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?

Raising the landfill levy would encourage this practice. A clear indication of how the levy will increase beyond \$60 per tonne is required to encourage investment in diversion from landfill.

### 97. Do you think the proposals outlined in this document should also extend to farm dumps?

Any methane from farm dumps will oxidise before reaching the atmosphere. The pollution from these sites is a serious problem but not a climate change issue.

### 98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?

Duty of care legislation restricting what property owners can bury on their land would be a good start.

NES for Land Disposal would also be a way of limiting what can be disposed of to land.

### 99. What other options could significantly reduce landfill waste emissions across Aotearoa?

A national Environmental Standard for disposal of waste to land would allow consistent regulation of the practice.

Enforcement of the NES for Air Quality with a reduction in the minimum capacity to qualify would ensure landfills had gas capture systems where feasible.



Requiring stabilisation of putrescible waste prior to disposal would limit methane production and leachate generation and is the preferred method across Europe.

## reNewing Zealand



23 November 2021

The Wood Processors & Manufacturers Association (WPMA) represents those invested in the manufacture of products from NZ's sustainably managed and renewable forests. Much of the manufacturing occurs using 'bio-energy' derived from process residues. The products themselves are environmentally beneficial stores of carbon for the duration of their existence, in some cases with an assumed half-life of 30+ years.

Climate Change and the transition to a circular, low emission economy can be enabled and facilitated by local manufacturing of wood and paper products. The reasonable probability is that in the absence of a domestic wood processing capacity NZ's aspiration of a net-zero emissions would require the import of wood and paper-based products from countries with a less environmentally benign domestic energy profile. By contrast, retention and expansion of NZ's domestic wood processing industry capacity secures regional employment and NZ's capacity to minimise waste through recycling. It provides the infrastructure and skills from which other, and capacity and innovation can grow including into novel products such as biochar and bio-based hydrocarbons and fuels.

WPMA is a member of the Manufacturers Alliance, an organisation representing companies with a shared passion for the future of manufacturing in New Zealand. In the post COVID market recovery / characterised by significant disruption of international supply chains and rapid escalation in freight costs, we see our major trading partners prioritising local manufacturing to improve national resilience, maintain / create new employment and ensure sustainable economic growth. WPMA reiterates the position of the MA in this regard.

### Meeting the net-zero challenge

### **Transition pathway**

 Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above, the correct ones? Please explain why or why not.

The WPMA agrees that the plan should be guided by a set of principles. The current principles fail to acknowledge the role that business plays in New Zealand's economy, seeming premised on the assumption that 'business' is discretionary as compared to the other components of a functioning society. Many regional communities will be significantly adversely affected from the continued loss of local manufacturing. More broadly, the loss of 'business' equates to a loss of environmental management capacity and, in some instances an increase in GHG emissions, for example where the loss of metal and other recycling results in increased landfilling and greater finite resource extraction.

The report acknowledges (p13) that *"we all have a role to play"* and you specifically note the role the private sector has in enabling climate action.

Private sector leadership and action is vital for Aotearoa to successfully achieve our low- emissions future. Its many levers – from investment and its power to influence and inform, through to climate change reporting and risk management, and the innovation and agility it can offer – will be required to help achieve this change and influence our shared ambition.

The guiding principles for the transition are silent on how government will work with the private sector. Given private sector leadership and action are vital we recommend this be addressed explicitly by adding a further principle to

### Work collaboratively with the private sector in implementing jointly developed strategies to give effect to the plan.

2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

Government is encouraged to take a principled approach including that the environmental cost of goods and services will be more explicitly reflected in the prices paid by New Zealand and overseas consumer.

Government needs to explicitly state how it will work collaboratively with each of the sectors and the agreed or ideal objectives of that collaboration. The Advanced Manufacturing Industry Transformation plan, developed in partnership with sector stakeholders is a possible mechanism enabling the articulation of measurable objectives and the steps / investment needed to achieve them.

Climate Change has the potential to be significantly more destructive economically than COVID if we fail to act quickly. International agreements on climate change and other environmental issues are an acknowledgement of the need for Government to ensure the price of goods and services better reflects their environmental cost. For this to happen the Government needs to resource economy-wide planning including providing a framework of clear domestic regulation and border adjustment that ensures broad engagement and equitable pricing. This mechanism must ensure imports and exports are regulated equitably.

Working collaboratively provides the opportunity for New Zealand to provide certainty and stability for business to confidently invest in the future to

- o Access low emission technologies
- Incentivise proactive investment enabling rapid uptake of technologies which lift productivity within prescribed emissions reduction limits. Accelerated depreciation and low or no interest loans targeting specific outcomes are obvious examples. Border Adjustment Mechanisms are recommended in order to avoid potentially costly investment in emissions reduction being rendered redundant by the importation of the same or similar production from jurisdictions without emissions reduction obligations. Ironically, the cost to New Zealand of not incentivising industry is that to meet New Zealand's NDC commitments the Government will buy offshore credits that provide no impetus to innovation and investment by New Zealand business and no benefit to the communities they support.
- 3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

Future transition is plagued with uncertainty. The role of government is to minimise the uncertainty associated with 'public interest' investment including by developing policy frameworks / strategies in partnership with business. The clear objective must be to deliver investment certainty including access to affordable renewable energy, supportive investment
settings and supportive trade and regulatory settings that enable the transition to a circular, low emission manufacturing sector.

New Zealand allowing imported emissions -intensive goods and services as the default response would bring into question the logic and ethics of Government's emissions reduction commitment. There is no environmental benefit and high domestic social and economic cost from policies and regulation that displaced the emissions from domestic production offshore through under-priced imports. This is the principle we assume adopted with respect to the favourable differential treatment of NZ's agricultural sector as compared to other parts of the economy.

4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

Ensure that the GHG and other costs of production are internalised in the price of goods and services such that consumer pricing reflects the true environmental as well as all other costs.

Introduce an equivalent cost of emissions on NZ's agricultural sector as on other parts of the economy, as compared to the continued indirect cross subsidy of that part of the economy by taxpayers including manufacturers.

Invest significantly more in research development and invest in the commercialisation and accelerated uptake of those technologies and solutions.

5. Are there any other views you wish to share in relation to the Transition Pathway?

The absence of an agreed definition of the subjective phrase "nature-based solutions" raises critical questions regarding the Government's assumption as to future direction. Solar cells require metals and manufacturing capacity and or retention of NZ's import / export capacity. Whether solar cells are 'nature based' is likely a matter of perspective. Plastics has a vital role, for example in maintaining the freshness of produce prior to consumption and without which additional GHG-intensive production of 'natural' products could be required. Recycling of all materials including 'natural' ones like paper require transport and process energy over and above the minimum cost of collection and landfilling.

In advancing the concept of the "circular economy", the government needs to embrace scientific, societal and economic complexity. It needs to move beyond simplistic assumptions as to 'nature based' and by implication 'unnatural' solutions.

The transition to 'circular needs to recognise the value of materials that can be repurposed, reused and recycled. That change in focus includes the greater reuse and repurposing of products and materials (rather than landfill) at the end of their first life, in recognition of the true environmental and other costs being embodied in the goods and services used by individuals and businesses. There are numerous exemplars (eg below) where restoration has retained products in service and indirectly limited emissions. A sustainable net-zero emissions economy will arise where individuals and businesses make the optimal decision in their circumstance while facing the full environmental cost of that choice. Government's 'market lead' evolution of a zero waste and net zero emissions economy requires that the 'market' be allowed to operate. That 'market' must include an equitable price 'at the border' if NZ's manufacturers, communities, and society is to survive.

# Helping sectors adapt

6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

The imposition of differential GHG costs to select parts of the economy the Government represents higher than justified costs on other sectors including manufacturing. It implies delaying the innovation and adoption of new methods on those operating from a favoured position, with environmental costs carried by other parts of the NZ economy.

By working collaboratively with key sectors, government will catalyse the opportunities which manufacturing industry has available. Clear direction as to the extent of regulatory obligation is needed to provide investment certainty for businesses including importing businesses. This is of particular importance where long-lived investments and change in established investment including early depreciation is required to accelerate NZ's transition away from fossil fuels.

What gets measured, gets managed.

Specifically for construction, MBIE needs to take a lead on developing a standardised and moderated approach to how life cycle analysis data is used in the construction sector. In absence of a transparent robust system then actors will continue to presume considerations which best present their material or service. Inadvertently this leads to ill-informed short-term decisions which reinforce a take, make waste economy rather than incentivising a circular economy. Government's selective and siloed approach to environmental and trade policy risks locking in a higher than desired emissions profile for the country or stranding assets and investment as and when international markets including environment-related border protections come into force.

7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

Differential treatment of different sources of emissions will continue to distort investment. The favourable treatment of agricultural emissions will distort land use in favour of such emitting activity and away from forestry.

NZ officials' unwillingness to address trade distorted in favour of log rather than processed wood products exports, will reduce NZ's investment in low-emissions manufacturing of wood products and or a local supply of wood-based biofuel. The focus of NZ trade policy should be to maximise the opportunity for New Zealand Inc and to incentivise the investment in the low-emissions economy required by future generations of New Zealanders confronting a GHG-constrained global market.

# Working with our Tiriti partners

8. The Climate Change Commission has recommended that the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. Which, if any, of the strategies listed are a particular priority for your whānau, hapū or iwi and why is this?

The WPMA does not presume to speak for iwi / Maori. Our assumption is that Government's work with Tiriti partners is predicated on the assumption that at the broadest level, both the obligations and benefits of effective climate change policy for iwi /Maori will be the same as for others in society. On that basis we suggest the current strategy of differential treatment of the emissions from land use could have a differentially negative impact on iwi / Maori. Historic difficulty associated with capital intensive investment in multiple-ownership Maori land has resulted in a significant area of NZ's pre-1990 forest land being in Maori ownership. The imposition of differential regulation and climate-justified constraint on development of that land has impeded its value, both as a lease -rental proposition for growing trees and a constraint on diversified investment. Removing the regulatory distortion arising from the imposition of an emissions liability on pre-1990 forest land would help redress this imbalance as would the

imposition of an equitable proportion of the liability for ruminate methane emissions to those responsible for them.

9. What actions should a Māori-led transition strategy prioritise? What impact do you think these actions will have for Māori generally or for our emission reduction targets? What impact will these actions have for you?

Maori interest and involvement in forest land ownership and management suggests they would be in a good position to benefit financially and in a broader employment and societal sense, from investment in regional wood processing and manufacturing. The net-zero emissions economy envisaged for 2050 will logically require some if not many of NZ's goods and services to be provided from bio-based feedstocks including wood. The capital intensive and long-lived nature of such investments suggest they are most likely to occur in partnership with or by those invested in forests and land used to grow commercial forests. Ownership of the regional value chain by iwi / Maori could assist with whanau and hapu based investment. Equitable regulation of pre-1990 forest land could extend that investment and diversification opportunity as and when it presented, for example the selective replacement of areas of forest land with solar and wind generation capacity.

- 10. What would help your whanau, community, Māori collective or business to participate in the development of the strategy?
- 11. What information would your Māori collective, community or business like to capture in an emissions profile? Could this information support emissions reductions at a whanau level?
- 12. Reflecting on the Commission's recommendation for a mechanism that would build strong Te Tiriti partnerships, what existing models of partnership are you aware of that have resulted in good outcomes for Māori? Why were they effective?

# Making an equitable transition

#### **Equitable Transitions Strategy**

The Commission recommends developing an Equitable Transitions Strategy that addresses the following objectives: partnership with iwi/Māori, proactive transition planning, strengthening the responsiveness of the education system, supporting workers in transition, and minimising unequal impacts in all new policies.

13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?

WPMA suggests it is hard to disagree with the objectives but draws the Ministry for the Environment attention to the pejorative language used in the document, for example

# We will work with industry and communities to minimise the cost of the transition for firms and lower income households .... helping emissions-intensive businesses ... working with businesses

Genuine collaboration and partnership is needed to engage effectively in meeting the challenge of climate change. Genuine collaboration is required to avoid any risk of a presumption by those in Government that they have the same understanding of and exposure to investment risk as other parts of NZ society.

14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission and any other objectives that you think should be included in an Equitable Transitions Strategy?

Meeting the challenge and achieving an equitable transition will require significant additional resourcing across key government agencies.

This is not business as usual and requires first and foremost an agreed definition of 'equitable transition', ideally developed on a bi-partisan political basis. Imposing costs on those goods and services whose price is influenced by the cost of fossil fuels will impact all parts of society. That impact will be socially regressive to the extent that those unable to invest in low emissions technology and lifestyles will have no other choice than to pay, directly or indirectly. NZ's export-dependent economy is equally susceptible to disruption as and when other countries act to shield their domestic producers and manufacturers from imports exempt the internalised cost of embodied emissions.

NZ has to date avoided confronting the true cost of its GHG reduction commitments by arguably inequitable allocation of the liabilities. Some emissions liabilities have been displaced temporally, by way of 'offset' carbon forestry. That situation cannot continue. There is a risk that if and when the EU and other nations impose CBAM's on imports they could act to discount or disregard 'offsets' from some jurisdictions. In the event that NZ 'offset credits' are recognised the future value of the emissions liability associated with offset forestry will be reflected in the price of eligible land, meaning offsets cease to be the least cost abatement option.

G Genuine consultation on the costs to NZ of the emissions price needed to achieve a net zero economy is required. Calculation and funding of the costs required to avoid inequitable outcomes on those adversely affected stakeholders is similarly essential.

The Commission suggests that the Equitable Transitions Strategy should be co-designed alongside iwi/Māori, local government, regional economic development agencies, businesses, workers, unions, the disability community and community groups.

15. What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?

A bi-partisan political commitment to measurable medium- and long-term goals is required to enable those adversely affected to make the necessary change, secure in the knowledge that their regulatory obligation won't change for a defined period. This may need to include an agreement as to the accepted definition of 'inequitable' outcomes and from that those sectors expected to face greater and lesser per-unit adjustment cost. WPMA suggests sector by sector collaboration based on genuine collaborative principles, that determines the measurable and specific minimum actions required by that sector and by when.

**Other actions** 

# 16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

Household income is a legitimate but separate consideration to an acceptable household emissions budget. Determination of NZ's emissions reduction strategy will generate 'winners and losers'. Addressing the unacceptable social consequence of NZ's emissions reduction strategy may fall in another area of fiscal responsibility such as social welfare. Mixing objectives within the determination of New Zealand's emission reduction programme risks policy confusion.

Ameliorating the impacts of climate strategy changes, where the extent or rate of change results in genuine hardship is a 'secondary' consideration. It can only be addressed after the emissions reduction strategy has been determined, through tax or social welfare changes and the use of EU style Border Adjustment Mechanisms. To address the issue of emissions reduction in any other way will inequitably distort investment and or waste capital, for example through delayed changes in NZ's dairy sector management. 17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

Investment in the 'new' economy and industry can occur provided Government sets clear long term and bipartisan investment direction in legislation. Include in long term climate strategy investment a clear commitment to an economy based on the costs of emissions being reflected in the costs of goods and services, including where goods and services are imported. This is why working collaboratively with business and local communities is so important. A net-zero emissions economy is clearly not the economy NZ has today but needs to be built from what currently exists. On a sector-by-sector basis government needs to partner with businesses, member organisations and host communities and, in the final analysis, be clear as to where and when changes are required.

18. What additional resources, tools and information are needed to support community transition planning?

Greater political courage and greater consistency as to the change in direction(s) required than has been shown to date.

19. How could the uptake of low-emissions business models and production methods be best encouraged?

Government providing investment certainty for business, iwi and community across key policy areas to ensure parties have confidence to invest time and resources in their entities to transition. Lack of leadership and ongoing policy uncertainty will create investment uncertainty.

#### 20. Is there anything else you wish to share in relation to making an equitable transition?

Government needs to think and work to harness the passion and innovation of New Zealanders to make the long-term changes required to the means of production and in the communities' expectations as to the cost and availability of goods, services and asset values.

COVID19 response has required NZer's including politicians to trust science and evidence-led decision making.

Robust science and working together collaboratively need to be the hallmarks of how government works with stakeholders to address the challenge.

# Aligning systems and tools

# Government accountability and coordination

21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

Government needs to establish clear benchmarks in legislation including the presumed consequence where benchmarks are missed. It is not possible to bind the legislative actions of future Governments meaning the visibility associated with having to overtly change legislation is the only sanction available. New Zealanders need plans and roadmaps. We all need to be held accountable – business, community and households and the political representatives of all those groups.

22. How can new ways of working together like mission-oriented innovation help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climate-resilient economy?

The question assumes there is a common understanding of the term 'a fair and inclusive society'. Our contention is that there is no consensus as to the meaning of that phrase, a situation that will become increasingly apparent as the intergenerationally questionable opportunity for low-cost offsetting is exhausted. The favourable treatment of ruminate methane as compared with the costs and obligations applied to other emitting sectors can be seen as unfair and economically distortionary.

Effective ways of working together in pursuit of common goals will become apparent only once 'common goal(s)' have been agreed. As the heading on page 34 says – "Working in new ways" - business is acknowledged as a partner along with iwi / Maori. Business in particular is familiar with mission orientated strategic planning and developing the basket of strategies to achieve the mission.

Is there anything else you wish to share in relation to government accountability and coordination?

Businesses and most other sectors of NZ society are more accountable to their core constituencies for their actions and inactions than politicians are to New Zealanders including future generations. The political time frame of 3 years is an inadequate incentive when it comes to the effective management of as significant an intergenerational issue as climate change. It is essential that Parliament show genuine leadership through bi partisan commitment to a meaningful and long term (15 years+) emissions reduction strategy. 15+ years represents a more realistic investment horizon for most low-emissions investments including afforestation and capital-intensive wood processing.

# Funding and financing

23. What are the main barriers or gaps that affect the flow of private capital into lowemissions investment in Aotearoa?

NZ's export dependent economy is conditional on the country's international trade arrangements and agreements that are increasingly out of step with the reality of a climate / environment constrained world. NZ's achievement of its own GHG-related goals coupled with continued access to high value and progressive markets internationally requires that we revise our border requirements to avoid economic and emissions leakage. European and other markets with domestic emissions reduction commitments are increasingly adopting measures 'at the border' to foster investment in their low-emissions economies. NZ needs to consider EU "Border Adjustment Mechanisms" as a means of fostering investment that would otherwise fail in the face of 'environmentally subsidised' imports.

Government needs to review where its research priorities and other support funding goes and cease funding inaction or initiatives which impact negatively on New Zealand's emissions. It needs to ensure the incentives are in place that result in the uptake of the findings of tax-payer funded emissions-reducing research. Specifically, it is uncertain what would incentivise the adoption of emissions-reducing research findings if that required represented no or negative returns on investment to the individual.

24. What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?

25. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

Government should prioritise policy development including selective use of incentives to achieve transition to a low-emissions economy including:

- Energy policy enabling investment in long lived and capital-intensive low emissions technologies and employment in NZ, rather than displacing emissions and the investment / employment opportunity offshore through purchase of carbon credits.
- Immigration policy favouring the critical skills required for a low-emissions economy, recognising they will be in short supply globally
- A policy of public investment and expenditure that accelerates the uptake of lower emission and more productive technologies and lower emissions-intensity land management.
- Trade policy ensuring local manufacturing competes on an even playing field with imports from countries with a lesser focus on emissions and other environment impacting manufacture.
- Trade policy reflecting the border controls and consumer preferences in high value international export markets, including for low-emissions and 'environmentally responsible' goods and services.
- Procurement policy which achieves the public interest by supporting New Zealand businesses, communities and consumers on the journey to a zero emissions economy by 2050.

#### 26. Is there anything else you wish to share in relation to funding and financing?

To succeed we will need considerable resource devoted to the identification and pilot testing of low emissions processes, products and services, including the identification or creation of viable markets for them.

The Government cannot rely on goodwill and volunteerism in a trade- exposed market, with the economic and social changes required to achieve net-zero by 2050 being as significant as they are. The "Voluntary Agreements" negotiated between business and the Government were possible because of a commitment by Government to respect those proactive investments if and when intervention was required. In the final analysis that commitment was not honoured, making the likelihood of significant progress on any basis other than clear statute unlikely.

It is infinitely preferable for New Zealand to fund local business, iwi / Maori and local communities to solve this complex challenge for the NZ economy than to assume other countries will accrue our costs. Notwithstanding any questions as to the integrity of some internationally recognised 'opinion leaders' positioning, there is no question that undue reliance on offshore carbon markets will attract criticism of NZ's position and therefore traded goods. Developing skills and capability in New Zealand provides resilience for the country and avoids the perception of extraterritorial displacement of New Zealanders environmental costs to other, perhaps less fortunate countries.

# **Emissions pricing**

27. Do you have sufficient information on future emissions price paths to inform your investment decisions?

Certainly not. Indications only, and those are predicated on an assumption that future Government's here and internationally will act in a consistent and environmentally responsible manner. There is no clarity on the current and future pricing of imported emissions in products

similar to those made in New Zealand. Nor can there be, as evidenced by the outcomes of COP 26 continuing a pattern of unsubstantiated aspiration rather than agreed action.

Emissions pricing needs to address consumption.

Trade policy needs to expressly address the risk of imported embodied emissions as a barrier to investment here. Carbon border adjustment instruments of the sort being promulgated by the EU in support of that trading block taking proactive action on climate change are critical to future investment in local manufacturing.

Failure to address 'emissions exposure' at the border with more certainty than is provided by EITE arrangements will result in local production (which bears the emission cost) being uncompetitive with imports from nations without meaningful and equivalent emission abatement cost. The risk is of manufactured imports enjoying an indirect subsidy, arguably in a manner similar to that employed by NZ in 'protecting' its agricultural products exports. The result of both is distorted investment and slower progress to genuine net zero emissions economic activity and investment in New Zealand.

#### 28. What emissions price are you factoring into your investment decisions?

The assumption is of a 'higher' price, based on the public statements of NZ and international politicians. There is no more certain basis that can be factored into investment decisions, with history showing political aspiration can be a poor indicator of the actual outcomes over time. The lack of certainty re pricing of consumption emissions undermines future investment confidence. The unseen 'price' being paid in NZ is stagnating investment (including reinvestment) and the risk that at some point otherwise competitive investment in NZ manufacturing, the employment associated with it and the innovation opportunities arising from retained skills are all lost. Perhaps less visibly but of no less concern is the progressive loss of resilience arising from loss of diversity of investment within the NZ economy, the cost of which has recently become apparent as a result of COVID and COVID-related transport disruption.

29. Do you agree the treatment of forestry in the New Zealand Emissions Trading Scheme (NZ ETS) should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

NZ's reliance on ETS credits in forestry is displacing the cost of today's emissions onto future generations, at the very least in terms of lost diversity of land use ETS Forestry credits represent the loss of land use flexibility without first incurring the cost of 'past' emissions. In the absence of a dramatic change in technology or global lifestyles the reasonable assumption is that the 'future' price of emissions will be significantly higher than the 'value' achieved by today's forest owners. Some 'opinion leaders' have characterised this as an "emit now, pay later" approach and a constraint on the structural reforms NZ has committed to internationally.

Forestry ETS credits are predicated on there being a long-term solution that permanently displaces the need for fossil fuel from the NZ economy. The slowing of the 'market price' of emissions being incorporated in goods and services as a result of reliance on forestry credits acts to discourage the innovation and investment NZ needs to achieve its goal of net-zero emissions. Substantial afforestation was occurring prior to the ETS in forestry interventions, driven in part by the removal of agricultural subsidies leading to land prices more reflective of the worth of the production capable from them. Subsidies have indirectly been reintroduced to agriculture as a result of the decision to displace the cost of agricultural emissions onto other parts of the predicted effect of increasing the cost of forest land and therefore afforestation and probably slowed the pace and extent to which afforestation would have otherwise occurred.

30. What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider ensuring we do not unnecessarily restrict forest planting?

Answered in part above. A significant constrain on forest planting is the differential regulatory treatment of emissions from other land use choices including ruminate methane, diffuse NOX and diffuse excess nitrate loss to waterways. Effects-based regulation of land use would see the costs of non-forestry land use choice increase and therefore the comparative ROI from forestry versus alternative uses of an area of land increase.

#### 31. Are there any other views you wish to share in relation to emissions pricing?

The compliance and regulatory cost per unit of emissions reduction of the ETS far exceeds the cost of a carbon tax applied to fossil fuel and, logically, on a per head of ruminate stock. That per-unit cost is only likely to increase as and when the EU and other of NZ trading partners requires NZ exporters to translate the domestic costs of emissions reduction into terms complaint with the EU CBAM.

# Planning

32. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

We would caution government not to focus on carbon in isolation of other of Government's and NZ's priorities. Climate policy developed in isolation is likely less effective and potentially counter-productive. Climate change is reported to be increasing the severity of some natural events which poses unique threats to our built environment. So too is durability, seismic resistance and resistance to fire. An effective long-term solution needs to take account of many factors over and above absolute emissions.

Performance to Building Code clauses will be critical for our future, resilient built environment. This should be a focus of activity, avoiding (and ideally outlawing) the adoption of different and varied GHG-related building requirements at the local and regional level. The Building Act enables environmental factors including climate change to be reflected in the Building Codes. Those codes can be varied depending on regional differences, for example with respect to insulation levels. Amend the codes to better reflect climate change but do not add cost and confusion by allowing Councils to send guess or duplicate duly developed and promulgated codes under the Building Act. Do not recognise or give credence to proponents of alternative and highly publicised green standards, recognising that to the extent they offer advantage it makes sense any requirements be incorporated in building codes to maximise the emissions reduction benefit nationally. To the extent they are not justified they are a dead-weight cost and impediment to other of Government's goals including the provision of affordable housing.

33. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

Introduce a tax on emissions from fossil fuels at a level that reflects the significance attributed that environmental externality. The result will better enable the market to operate, in the form of a greater emphasis on low emissions options in consumers choices of goods and services.

#### 34. Are there any other views you wish to share in relation to planning?

How we measure impacts is critical.

Currently our focus is on lessening impacts to consumers in the take, make, waste society, ostensibly by presuming to shift the cost to producers in the form of "extended producer responsibility" obligations. EPR is a misnomer in NZ's market and open economy, with the costs passed on in full where possible in order to maintain profitability. The alternative outcome is for NZ production, employment and emissions displaced locally but continuing and even increasing on a per unit of production basis offshore, by way of imported goods.

Transitioning to a circular focus will see housing and transport inextricably linked and measured accordingly. The emissions cost of greenfield subdivisions could become apparent through overt emissions pricing and other regulation. That in turn might drive the market to the re–intensification of existing urban environments, valuing the building / infrastructure we already have and reusing / repurposing for future use. Alternatively, it may not, particularly where the disproportionate upfront cost of retrofitting infrastructure into an existing community (including RMA consenting costs) outweighs the longer-term price advantage to the homeowner of lower GHG / transport and other costs.

Regional development including retaining regional manufacturing capacity has the 'emissions reduction' advantage of retaining value and occupancy in existing regional communities. The reduced internal migration in pursuit of employment in NZ's larger centres and offshore should be recognised as of GHG advantage if it reduces the need for additional investment in housing and infrastructure and the early depreciation of fixed horizontal assets already invested in by those regional communities.

### **Research, science and innovation**

35. What are the big challenges, particularly around technology, that a mission-based approach could help solve?

NZ is likely best to focus its R&D on maintaining a watching brief on the outcomes of climaterelated research internationally and adapting and applying it in NZ. The fundamental problem of climate change is one of basis economics rather than dramatic technological shifts. The latter would of course be welcome but are more likely to occur offshore given the substantial research effort such economies can sustain.

NZ's research opportunity lies in its smaller population density and good growing conditions. Research can and should be focused on adapting what are often well-developed bio-based technologies for NZ's needs and feedstocks.

36. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?

Government needs to develop a robust and transparent scorecard regarding its research funding priorities. This needs to prioritise transition to low emission circular economy and cease funding technologies / sectors which reinforce the *take make waste* linear model. This can and should include consideration of technologies aimed at extracting value from under-valued and wasted materials including the millions of tonnes of waste landfilled annually. Much of this waste (reportedly 81%) is bio-based, suggesting its use to produce electrical and liquid fuels offers real GHG reduction opportunities in internal transport. That opportunity could be at comparatively low cost to NZ if the current and levied cost of landfilling is recognised as a dead-weight cost to the economy now.

Given the scale of the climate change challenge and short time available to address that challenge we would propose a broader range of incentives being open to all parties and not just through formal (and restrictive channels) like Callaghan Innovation.

The Government could usefully recognise that manufacturing in NZ's export-focused and open market economy will be greatly influenced by the requirements of the markets with which we currently and want to trade.

37. What opportunities are there in areas where Aotearoa has a unique global advantage in low-emissions abatement?

New Zealand has a comparatively low population density and abundant existing hydro and underdeveloped wind renewable energy capacity. That coupled with the NZ's geographic isolation could be seen as another opportunity to reduce the GHG cost of internal travel and transport through a focus on electrification of rail and road freight, the latter providing "last mile" connectivity.

A net zero emissions economy by 2050 will be configured significantly differently compared to NZ's current settings and likely comparatively unique in world terms. The Manufacturers Alliance represents the NZ-focused capacity and expertise that will be required to identify and adapt low-emissions solutions being researched internationally for NZ conditions and priorities.

More specifically, NZ has supplies of iron sand, along with significant future potential capacity for renewable energy generation. Steel is an infinitely recyclable material, with an estimated 85% of all steel products being recycled at end of life<sup>1</sup>. Similar and related views can be taken of other NZ manufacturing, recognising that where it has established in NZ and been maintained over decades to unconstrained import competition it is both competitive and desired in a NZ economic setting.

In a similar way, NZ has an established forest, wood processing and paper recycling sector. It and NZ's agricultural industry are predicted on the country's comparative advantage of good growing conditions.

The fact that NZ's economy is geared to converting sunlight and water into food for export rather than into bioenergy, bioplastic or reductive metals processing reflects the past / current priorities and values. There is no reason to assume that NZ's net-zero emissions future will be the same, meaning NZ's 'unique opportunities' are likely ultimately dependent on the political and societal pressure placed on emissions reduction. Any reconfiguration of manufacturing in NZ to reduce emissions is in the final analysis dependent on the Government's willingness to impose the cost of associated environmental externalities onto those using goods and services. The "unique opportunities' are likely political and social acceptance of the socially regressive nature of environmental protections.

38. How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?

Government needs to provide the stable policy settings enabling business to confidently invest secure in the knowledge that the social and economic costs of those policies will not result in a change in legislative (including tax) liability. Stable policy settings need to include:

<sup>&</sup>lt;sup>1</sup> https://www.worldsteel.org/media-centre/blog/2018/steel-surprising-recycling-champion.html

- o Energy policy
- o Trade policy
- o Investment policy
- o Immigration policy, and
- o Ensuring government procurement then reinforces the opportunity for local business.
- 39. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?

As discussed above, NZ's solid waste is reported to consist of approximately 80% organic content. Diverting large volumes of waste from landfill for use as a fuel has the potential to benefit NZ's net GHG emissions by:

(i) reducing the transport emissions from its separate collection and sorting, (ii)eliminating organic / putrescible waste form landfill and therefore any associated methane emissions,

generating electricity for the increasing demand on national grid as more of NZ's transport electrifies.

40. Are there any other views you wish to share in relation to research, science and innovation?

Energy from waste is well established in other developed economies. Government funded R&D could examine the applicability of EfW to NZ, recognising that the regulatory and perceptual / community hurdles to its adoption will likely require Government support or intervention if they are to be overcome.

### **Behaviour change**

41. What information, tools or forums would encourage you to take greater action on climate change?

NZ's total economy and population are small on a world scale. Multiple fora and exhaustive regulatory processes impede innovation and, in some instances, impede even frank and informed discussion.

WPMA suggest the amalgamation of information and tools into fewer if not a single collaborative forum, whereby Government, industry and other affected stakeholders can assess and resolve policy and direction. Ideally, such national direction will encompass and therefore eliminate the need for further and localised debate as and when specific projects are advanced.

Supporting exemplars is critical to demonstrate what can be achieved and to normalising low emission behaviours. Rewarding early adopters (like support for low emission vehicles) is critical, including providing protection from unreasonable rates of obsolescence because of short term changes in policy direction and regulatory cost.

Critical is governments leadership with its own buildings and transport fleet.

42. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

Third party verified information of a standard commensurate with the requirements of the Fair-Trading Act is critical to inform decision making. Consumer demand for and support of environmentally preferable goods and services is dependent on consumers (including businesses, investors and government agencies) having confidence that the intangible

environmental value claimed for a product or service is substantial. Verification of environmental claims is good practice and is a clear legal requirement under the Fair-Trading Act 1986.

Life cycle analysis, environmental product declarations, environmental labels could all benefit from being third party verified. The subjective nature of environmental and bio-circular economy claims can limit their usefulness as measures able to be judged impartially by consumers without independent validation. Quantification of Government's expectation and understanding in regulation and law, as to good practice and in the exercising of its own considerable purchasing power within the economy would greatly assist in this regard.

These initiatives are expensive and to increase uptake government could consider partnership funding to accelerate data collection / verification.

43. Are there other views you wish to share in relation to behaviour change?

### Moving Aotearoa to a circular economy

44. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

Logic and economic requires that the **outputs and outcomes** representing the 'circular economy' looks the same in 2030 as in other decades or is at least predicated on progress to a single agreed outcome. It is not helpful for those required or wanting to make circular investments for Government to suggest that circular outcomes are not clearly understood and subject to change over time.

The reality is that a step change to the circular and low emissions economy requires progressive investment. This will not happen or will happen more slowly in the absence of clear articulation of 'the end game', ideally supported by clarification of statutory obligation from voluntary expectation.

45. How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?

Environmental management and sustainable outcomes are ultimately a Government and community construct. Industry and business are subsets of society rather than separate from it. WPMA members ability to do more than is required of all other parties including competitors is very limited. Consumers (including Government, other businesses and households' willingness to pay for intangible environmental attributes appears similarly limited in the absence of regulatory obligation.

The Government has defined the bio-circular economy as net zero GHG emissions by 2050. If that is no longer adequate and or needs to be better defined it is for Government to do. Please note that in an export focused and market economy the influence of the NZ Government can and will be overshadowed by the requirements of other nations to which we expect / hope to trade with and where those requirements exceed NZ's statutory minimums.

46. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?

As above ... it is a component of the circular challenge, along with the technosphere and human behaviour and they need to be worked on together.

47. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

The proposals as currently articulated are insufficient to create transition and fail to build off the significant investment that MfE have made in New Zealand's Circular Economy with the Ellen MacArthur Foundation.

48. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

Its complex and New Zealand needs to understand international best practice, adopt what is appropriate for New Zealand. We don't have time to re-invent the wheel, we need to adapt what has been learnt elsewhere.

Environmental management and sustainable outcomes are ultimately a Government and community construct. Industry's ability to do more than is required of all parties including competitors and or consumers are willing to pay for is limited. The Government has defined the bio-circular economy as net zero GHG emissions by 2050. If that is no longer adequate and or needs to be better defined it is for Government to do. Please note that in an export focused and market economy the influence of the NZ Government can and will be overshadowed by the requirements of other nations, where those requirements exceed NZ's statutory minimums.

49. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

Investment in low emission technologies is critical. It needs to be accompanied by stable and supportive policies across trade, energy, immigration / skills reinforced by government procurement.

Environmental management and sustainable outcomes are ultimately a Government and community construct. Industry's ability to do more than is required of all parties including competitors and or consumers are willing to pay for is limited. The Government has defined the bio-circular economy as net zero GHG emissions by 2050. If that is no longer adequate and or needs to be better defined it is for Government to do. Please note that in an export focused and market economy the influence of the NZ Government can and will be overshadowed by the requirements of other nations, where those requirements exceed NZ's statutory minimums.

# 50. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

Environmental management and sustainable outcomes are ultimately a Government and community construct. Industry's ability to do more than is required of all parties including competitors and or consumers are willing to pay for is limited. The Government has defined the bio-circular economy as net zero GHG emissions by 2050. If that is no longer adequate and or needs to be better defined it is for Government to do. Please note that in an export focused and market economy the influence of the NZ Government can and will be overshadowed by the requirements of other nations, where those requirements exceed NZ's statutory minimums.

# **Transitioning key sectors**

### Transport

We are proposing **four new transport targets** in the emissions reduction plan and are seeking your feedback.

51. Do you support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

Any aspiration is supported by the significance of the problem of anthropogenic climate change and the fact that past measures have resulted in increased emissions from this sector. What is not clear is why past policy and actions have failed to reverse years of increasing emissions and what specific and additional measures Government intends to take to achieve meaningful reductions.

Mode shift plans and incentives need to be creative to support manufacturing workforce.

For example, it is extremely unlikely that shift workers across South Auckland (and in other manufacturing centres) will be able to walk, cycle or access public transport for work. It is also unlikely that in early budget periods that low / middle income shift workers will be able to afford to purchase EV's. Clarification of Government's apparently conflicted aspirations of reduced transport emissions and an equitable and just transition is recommended.

52. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

Government needs to be developing solutions that are equitable – particularly for workforces outside CBD's – e.g. manufacturing, logistics and construction. Investment in regional economic growth and existing regional centres offers a lower cost way of enabling reduced per capita GHG emissions, by reducing the need for long commute times and investment in the public infrastructure needed to accommodate expansion in some urban centres.

53. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

Our understanding is the technology is currently available. Government's useful role will be to provide stable (15 years +) policy settings to provide investment certainty for business to invest in what can be long-lived infrastructure and to justify the early depreciation of productive assets already invested in.

54. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

#### As per 54.

55. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

As an aspiration and signalled well in advance it is supported in principle. To progress beyond aspiration the Government needs to provide regulatory certainty for the investment required and to ensure alignment with other Government objectives. Does the early depreciation of one asset and investment in another result in lower GHG emissions when calculated over the whole of the life cycle? How can investment in alternative forms of road transport be aligned to them complement rather than conflict with other policy options such as electrification of rail freight and greater access to public transport? –Ensure that policies are designed to reduce inequities rather than increase them.

56. Are there any other views you wish to share in relation to transport?

# **Energy and industry**

#### **Energy strategy**

57. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

Government needs to work quickly with stakeholders to develop and commit to a long term (15+ years) energy strategy which will enable successful and fair transition. Assumptions by Government that businesses will exit to accelerate transition are naïve, demonstrably contradictory of past actions of Government including SOE's and will result in increase in net national emissions (e.g. NZ Aluminium Smelter and Methanex).

Successive governments have failed to develop robust strategy to enable energy transition.

- As a result, New Zealand is currently reliant on burning upwards of 1.5 million tonnes of imported coal p.a. to meet winter peak demand. Climate change has added to uncertainty of rainfall / hydro capacity and will continue to do so. New Zealand is highly likely to continue to be burning coal as a result, at least until alternative renewable generation comes on stream. The nature of NZ's electricity market suggests new generation will be invested in only after the cost of and emissions from coal become prohibitive or politically untenable.
- Scarcity, resulting from lack of new generation has impacted significantly on local manufacturing, creating more future uncertainty for business. A result is reduced likelihood of investment in emissions-reducing investment such as paper and metals recycling that also provide employment, circular and 'reduced waste' benefits to the NZ economy.
- Current proposals to phase out reliable high value process heat without first ensuring alternatives are available at a price that is commercially viable in an open and trade-exposed economy adds to uncertainty for business and undermines profitability.

Energy uncertainty is unnecessary and unacceptable in light of the risks highlighted above. Government is the largest investor in New Zealand's generation and the majority controlling interest in much of it. Our submission is that it is essential that politicians and government show leadership in developing and implementing a comprehensive energy policy by which we mean one geared to the delivering the multiple outcomes required for a sustainable, circular and equitable society. Reliable renewable energy capacity, measured in terms of assured supply at commercially competitive prices after taking into account the lack of any trade protection available to NZ manufacturing and the predictable diurnal and seasonal demand made of supply capacity as electricity displaces fossil fuels in private and freight transport.

Commercially competitive high heat source for manufacturing, whether because of increased supply of renewable energy or countervailing measures redressing the imbalance in cost competition with nations exporting manufactures produced with the benefit of environmental subsidises including the absence of a cost on emissions

Fair and affordable energy for householders, industry and transport including though the removal or rebate of the indirect cost of emissions transferred through selective regulatory obligation from NZ's ruminate agriculture to the rest of the economy

#### Setting targets for the energy system

59. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

NZ has the technology and capability to achieve almost any proscribed renewable energy target. What is lacking is the current capacity and scale and the future investment certainty to justify significant and lower-returning investment. In short NZ lacks the policy settings and political leadership to be certain that any level of ambition beyond the modest would be achievable if recommended.

# Phasing out fossil gas while maintaining consumer wellbeing and security of supply

60. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Don't phase out natural gas until there is sufficient supply of electricity and hydrogen available at commercially competitive pricing. Pre-emptive phase out of natural gas appears unlikely to assist NZ in meeting its short and medium term GHG reduction targets, given the apparent and understandable political and fiscal pressure to maintain security of supply of electricity using imported and local coal.

Renewable energy is one of New Zealand's potential sources of competitive advantage, which could deliver high quality of life for all New Zealanders and low-cost energy for industry. One only needs to look at the significant gap between generations costs from hydro plants and cost to consumer to recognise that margins are exorbitant and the old "gentailer" model has failed to deliver affordable supply or proactive investment in substantial low emissions generation. The fact that Government itself has identified the need to respond to the dry year risk by actively intervening in the market (Lake Onslow) supports the contention that the current 'market' model is delivering less than 'sustainable' outcomes. WPMA suggest that an electricity supply based on constrained transmission between distant generation and demand does not lead to adequate commercial competitive tender. In the same way that local control and interests has led to issues in the management of water, Government needs to view electrical energy at least as an essential public service as much or more than a discretionary choice prone to nodal monopoly pricing which, if left as is will impede in electricity-dependent investments in emissions reduction.

#### Decarbonising the industry sector

61. How can work under way to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

The absence of sound policy under pinned by robust strategy will perpetuate the delayed investment in the circular and low emissions NZ has committed to internationally and which is likely to be an increasing expectation of NZ's high value export markets. We have the technology to do this. What is needed is leadership and investment certainty for business and homeowners.

62. Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?

NZ needs to update its understanding and application of the "public interest', as that concept is understood and applied by MFAT and MBIE in negotiating and interpreting NZ's international trade obligations. As a minimum, NZ needs to ensure that NZ and any counterparties to trade agreements to which we are signatory have and apply the same interpretation to requirements and protections related to NZ's public interest.

#### Addressing current data gaps on New Zealand's energy use and associated emissions through an Energy and Emissions Reporting scheme

63. In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold?

Logic and economics suggest there is no reason to distinguish "large" emitters from small in any industry. To do so is to introduce the very real potential for regulatory distortion that discourages investment and perpetuates higher-than-needed emissions. WPMA sees no reason to distinguish "large" transport users given the externality in question relates to fuel use. A carbon / emissions price applied without fear or favour is low or no additional cost to administer and avoids the need for arbitrary intervention based on 'size'.

- 64. We have identified a proposed threshold of 1 kt  $CO_2e$  for large stationary energy users including commercial entities. In your view, is this proposed threshold reasonable and aligned with the Government's intention to meet emissions budgets and ensure an equitable transition?
- 65. Logic and economics suggest there is no reason to distinguish "large" emitters from small in any industry. To do so is to introduce the very real potential for regulatory distortion that discourages investment and perpetuates higher-than-needed emissions.
- 66. WPMA sees no reason for any distortion of "large" transport users given the externality in question relates to fuel use. A carbon / emissions price applied without fear or favour is low or no additional cost to administer and avoids the need for arbitrary intervention based on 'size'.

In your view, what is an appropriate threshold for other large energy users such as transport companies? Logic and economics suggest there is no reason to distinguish "large" emitters from small in any industry. To do so is to introduce the very real potential for regulatory distortion that discourages investment and perpetuates higher-than-needed emissions. WPMA sees no reason for any distortion of "large" transport users given the externality in question relates to fuel use. A carbon / emissions price applied without fear or favour is low or no additional cost to administer and avoids the need for arbitrary intervention based on 'size'.

67. Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and Emissions Reporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed. Logic and economics suggest there is no reason to distinguish "large" emitters from small in any industry. To do so is to introduce the very real potential for regulatory distortion that discourages investment and perpetuates higher-than-needed emissions. Manufacturers Alliance sees no reason for any distortion of "large" transport users given the externality in question relates to fuel use. A carbon / emissions price applied without fear or favour is low or no additional cost to administer and avoids the need for arbitrary intervention based on 'size'.

#### Supporting development and use of low-emissions fuels

68. What level of support could or should Government provide for development of lowemissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

Partner with key stakeholders to understand demand and supply options as well as the eventual cost and therefore demand for the product in an open and unsubsidised trading economy. For example, bio-energy from plantation pine. While the concept is superficially attractive, the wood fibre feedstock needed for its production is unlikely to be available given the gaps in trade policy (which enable 50% of harvested logs to be exported) and cyclical nature of historic plantings / current stock.

A reality that needs to be confronted is that in a future global economy dependent on bio-based or low emissions feedstocks, much of NZ's production whether plant or animal, will accrue a value based on its ability to supply energy to an energy-dependent world. NZ's production of biofuel from tallow was displaced by a higher value for the feedstock in foreign markets. A global price on carbon suggests NZ cannot expect to avoid the true cost of emissions if our commitment to GHG reductions is genuine and precludes access to goods and services with high or hidden embodied emissions costs.

Government selection and subsidisation of bioenergy production will have consequences for other direct and indirect market participants. The diversion of wood processing to fuel production will lead to shortage of wood and higher cost for construction and paper packaging. It could have the unintended consequence of fostering increased construction using emissions - intensive alternative building materials or increased imports of products such as recycled and food-quality paper packaging currently manufactured in NZ.

69. Are there any other views you wish to share in relation to energy?

# **Building and construction**

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

If the energy performance and GHG intensity of construction is of more importance to Government than affordability and availability, those characteristics should be recognised in NZ's building codes. It is important that dead weight cost and regulatory delay is avoided by researching and specifying such requirements only once nationally. National prescription of

such requirements avoids the cost and uncertainty of local councils determining and applying such measures where that resulted in duplication of effort and potential confusion as to what regulation applies.

71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

Government is a significant consumer of NZ's construction capacity. Government can and should, as a purchaser of such goods and services, stimulate demand and provide cost efficiencies through the scale and consistency of the purchasing decisions made by central and local government agencies.

Emissions-related design expectations should apply to all resource use and be verified with real operational data. Emissions from construction not restricted to energy usage and dwellings and offices. Water supply, wastewater and stormwater (all of which also have energy embodied in them) are examples, as are construction applied to transport infrastructure.

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

#### Comments made above in relation to construction apply.

What is the rationale for limiting the Build for Climate Change Programme to energy? Climate Change is significantly impacting water availability and quality as much as it impacts energy. We recommend setting out to address both in a consistent manner.

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

Government intervention in energy use and fuel choice on a selective basis may offer political advantage but risks undermining the climate-related justifications for it, including through fuel and mode switching. A carbon / emissions tax will fairly price the environmental externality at minimal dead-weight compliance cost and enable energy users to make the appropriate choices and investments for their particular situation.

74. Do you believe that the Government's policies and proposed actions to reduce buildingrelated emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

Continued high energy prices will impact upon health and well-being of low-income families and older residents. The differential treatment of ruminant methane and other agricultural externalities could be unsustainable and unreasonable subsidies and expose NZ's exports to the risk of non-tariff restriction in climate-sensitive markets. Differential regulation acts to distort investment and risks unintended consequences including loss of regional employment, loss of

manufacturing resilience and diversity in the national economy. That in turn poses a risk of reduced knowledge and expertise needed for NZ's economy to diversify and innovate.

75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?

#### By ensuring consistent building standards by way of the Building Act.

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

# No, for reasons discussed above in relation to the need for climate-related policy to clearly and consistently target emissions to ensure unintended consequences, distorting investment and unnecessary compliance costs.

77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

# Low emissions innovation cannot be addressed in isolation – it is part of the transition to a circular economy.

A contestable fund for transitioning Building and Construction to low emission circular economy could result in lower emission outcomes. It could equally impede or distort investment from the least-cost means of achieving a given level of national emissions reduction. The fact that ruminates methane is subject to a lesser set of obligations imposed over a longer time frame is a case in point to the extent that that cross subsidy represents an inequitable imposition of cost on some other part of the NZ economy and on individuals less able to afford that cost.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

Government's proposed waste strategy identifies 81% of NZ's solid waste is organic in origin. This waste could be repurposed at minimal cost for use in thermal heat and electricity production, reducing the volume disposed of to landfill to its ash content and avoiding the potential for landfill methane emissions. Sorted and subject to other investment, it could serve as the feedstock for a domestic supply of liquid transport fuels and or higher value hydrocarbons.

79. What should the Government take into account in exploring how to encourage lowemissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

# Government should restrict itself to updating the building codes to reflect any outcomes it seeks in construction.

80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

Collaborative partnership with industry to understand current and future needs for a net-zero emissions economy. Government could then foster agreed outcomes using the purchasing power and scale of central and local Government.

81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

Fine to have the Vision – where is the strategy and pathways to achieve that vision?

Building for Climate Change discussion documents were published late 2020. Had MBIE adopted a partnership approach – *how are we going to achieve this together*? the sector may have been significantly further advanced than it currently is.

New Zealand needs new collaborative, co-designed approach to the development of policies and the strategies to deliver on that policy.

82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

# Agriculture

- 83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?
  - a. How could the Government support the specific needs of Māori-collective landowners?
- 84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?
- 85. What research and development on mitigations should Government and the sector be supporting?
- 86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?
- 87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?
- 88. Are there any other views you wish to share in relation to agriculture?

The differential treatment of agricultural emissions and the indirect imposition of that cost onto the rest of the economy is likely an unsustainable subsidy and an impediment to investment in the lower-emissions economy possible from the greater use of forest and wood products. Continued favourable treatment of agriculture could attract countervailing non-tariff barriers from NZ's trading partners. The fact of favourable regulatory treatment of agriculture as compared to the rest of the economy will serve to disincentivise the adoption of emissions reducing technology and management from the agriculture sector itself, unless it confers other substantial cost advantage or direct subsidy from Government.

### Waste

89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

Comments made above in relation to waste apply. There is no justification for a differential focus on landfill gas methane other than that that exists already, through the long-standing management of such emissions as a condition of Resource Consent and landfill design.

NZ's solid waste is substantially organic suggesting its diversion from landfill for use as a fuel in the generation of electricity and industrial heat should be considered a matter of priority.

- 90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?
- 91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?
- 92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?
- 93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?
- 94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?
- 95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?
- 96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?
- 97. Do you think that the proposals outlined in this document should also extend to farm dumps?
- 98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?
- 99. What other options could significantly reduce landfill waste emissions across Aotearoa?

### **F-gases**

- 100. Do you think it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable, or not?
- 101. One proposal is to extend the import phase down to finished products containing highglobal warming potential HFCs. What impact would this have on you or your business?
- 102. What are your views on restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available?
- 103. What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?
- 104. Do you have any thoughts on alternatives to HFC refrigerants Aotearoa should utilise (eg, hydrofluoroolefins or natural refrigerants)?

105. Can you suggest ways to reduce refrigerant emissions, in combination with other aspects of heating and cooling design, such as energy efficiency and building design?

### Forestry

106. Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

Government intervention in forestry by way of an arbitrary distinction between pre and post 1990 forests has served to impede afforestation and perpetuate artificial land pricing. Forestry offers a long-term solution to NZ as a low emissions economy but not through reliance on carbon forestry.

There is no climate -related justification for favouring the planting of native or other species. Wood processors are invested in the processing of all parts of the harvest from P. radiata, leading maximised returns from that species. A consequence of the efficient processing is greater climate-related benefit per unit of harvest, as compared to some other species.

Government may have an interest in alternative forest species for reasons and outcomes unrelated to climate change. If that is the case those other interests need to be disclosed and mandated in policies other than Government's climate change strategy, for example in the context of the proposed NPS on biodiversity. The risk of confused objectives leading to poorer overall outcomes is elaborated on above and applies in respect of the sorts of forests NZ landowners are encouraged to plant.

Government Value. We would draw Ministry for Environment's attention to current exotic pine plantation stocks illustrated in Figure 1 below<sup>2</sup>.



• New Zealand's Building & Construction sector is currently experiencing a severe shortage of timber.

<sup>&</sup>lt;sup>2</sup> https://www.canopy.govt.nz/assets/content-blocks/downloads/43540-NEFD-2020-12-18-14-10.pdf

- o It is estimated that New Zealand current exotic harvest is 40,000 hectares annually.<sup>3</sup>
- o It is estimated that 50% of what is harvested is exported in log form to China.<sup>4</sup>

In the absence of robust trade, investment, energy policy we ask as to whether New Zealand will have a viable timber processing sector in the future.

Faced with the challenges of climate change it appears counter-productive to focus on plantation forestry of exotic species which reduce New Zealand's biodiversity and increase risk of forest fire in climate challenged New Zealand.

Why not incentivise planting of native timbers such as totara?

- 107. What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?
- 108. What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?
- 109. What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?
  - a. Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?
  - b. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?
- 110. If we used more wood and wood residues from our forests to replace high emitting products and energy sources, would you support more afforestation? Why or why not? See comments above.
- 111. What role do you think should be played by:
  - a. central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment?
  - b. the private sector in influencing the location and scale of afforestation?

Please provide reasons for your answer.

See comments above.

- 112. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?
- 113. From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?
- 114. Are there any other views you wish to share in relation to forestry?

This section on forestry duplicates a number of the questions posed in relation to other sections. Your attention is drawn to those answers.

<sup>&</sup>lt;sup>4</sup> https://interactives.stuff.co.nz/2021/08/trade-off-china-nz-exports/



<sup>&</sup>lt;sup>3</sup> https://www.stuff.co.nz/national/politics/126038965/millions-of-cubic-metres-of-logs-leave-our-shores-every-year--all-while-we-remain-desperately-short-of-timber



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#### 24th November 2021

#### To: Ministry for the Environment

The Emissions Reduction Plan is our best chance to tackle climate change. But it falls short of what is needed to address this urgent crisis.

# WWF-New Zealand and 1566 New Zealanders have signed this letter, calling for ambitious and tangible actions to be included in your Emissions Reduction Plan.

We don't need more debates, investigations, consultants' reports, and R&D. This isn't going to cool the planet. We have the solutions already.

• We need regenerative agriculture to be an investment priority now as farming is nearly 50% of the country's emissions.

Adopt ambitious goals to reduce food loss and waste by at least 50% from farm to fork, with particular attention to food lost on the farm before, during and post-harvest. Promote transparent reporting on food loss and waste reduction, supporting regulatory frameworks and policies if required. Set up a regenerative agriculture fund to support the just transition for the farming community. Establish transition hubs and a \$1 billion regenerative farming fund. Business leaders have called for local 'Regeneration hubs' or transition hubs for '<u>sunrise sectors</u>'. These hubs will make sure farmers have all the information and choices available to them to shift production modes, and get funding for regenerative, organic extension services. They also call for linking these hubs to government funded 'transition banks' with revolving loan schemes, and other appropriate finance to de-risk the



transition for farmers. We support <u>Greenpeace's call</u> for 3-year grant funding for farmers undertaking changed practices, as part of their \$1 billion regenerative farming fund proposal, to allow farmers to gain experience in them.

Price agricultural emissions in the Emissions Trading Scheme at the processor level from 2022. This finally brings the sector into the ETS like the rest of the economy, and puts the burden on big companies like Fonterra, and the fertiliser companies to stimulate industry-wide change, rather than individual farmers.

Phase out synthetic nitrogen fertiliser by 2030.Synthetic fertiliser companies Ballance and Ravensdown are <u>responsible</u> for 2.7 million tonnes of emissions annually alone.

• We need to prioritise nature-based solutions including native forestry and the oceans blue economy.

Specific actions include:

Protect, manage, and restore terrestrial and aquatic ecosystems, being explicit about trade-offs between different production practices. Scale up agroecological and regenerative practices to leverage area-based conservation efforts while improving livelihoods, adaptation, and climate resilience.

Scale up financial support for small scale farmers and fishers, including women and other vulnerable groups, by repurposing public agri-food support (including subsidies), and ensure their inclusion in decision-making, to build resilient supply chains and enhance biodiversity in productive land and seascapes.

Support the private sector in implementing sustainable supply chains that are deforestation- and conversion-free, fully respect human rights and provide fair living wages. Promote transparent reporting on sourcing and supply chain activity, supporting regulatory frameworks and policies if required.

That the government undertake <u>adequate assessment</u> of the potential impacts of expanding forest biomass harvesting on carbon sinks, biodiversity, water, and air pollution.

• We need quantifiable emission targets to show, year-on-year, we are achieving the carbon budgets for each sector.



• We need a significant budget allocated to reducing emissions in 2022 and in subsequent budgets.

Right now, we have a chance to tackle the climate crisis and put nature on a path to recovery. Listen to the voices of over 1566 New Zealanders.

We must act now.

Ngā mihi nui,

Livia Esterhazy, CEO, WWF-New Zealand

# **Supporting Signatures:**

# Supporting signatures removed for privacy

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