Emissions reduction plan

Summary of submissions

Ministry for the Environment
Manatū Mō Te Taiao

Te Kāwanatanga o Aotearoa
New Zealand Government

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This document may be cited as: Ministry for the Environment. 2022. *Emissions reduction plan: Summary of submissions*. Wellington: Ministry for the Environment.

Published in May 2022 by the
Ministry for the Environment
Manatū Mō Te Taiao
PO Box 10362, Wellington 6143, New Zealand

ISBN: 978-1-99-102534-0

Publication number: ME 1646

This document is available on the Ministry for the Environment website: www.mfe.govt.nz

Contents

Executive Summary 5
- Submissions received 5
- Major themes 5

Overview 7
- Introduction 7
- Public consultation 7
- Methodology 12
- Summary of submissions 13
- Overall themes and key messages 16

Meeting the net-zero challenge 20
- Transition strategy and pathway to 2050 20
- Enabling an equitable transition for Māori 26
- Ensuring an equitable transition 30
- Government accountability and coordination 33
- Behaviour change 35

Aligning system settings and using cross-sector tools 37
- Funding and financing 37
- Emissions pricing 38
- Planning 41
- Research, science and innovation 43
- Circular (and bio) economy 47

Transitioning key sectors 50
- Transport 50
- Energy and industry 54
- Building and construction 61
- Agriculture 68
- Forestry 72
- Waste 77
- F-gases 82

Annex A: Discussion document questions 86
- Meeting the net-zero challenge 86
- Aligning systems and tools 87

Transitioning key sectors 89

Annex B: Specific proposals 95

Annex C: Template from Forest & Bird 99

Annex D: Template from the Green Party 100

Annex E: Children's illustrations 103

Glossary 104

Tables

Table 1: Quantification of submitters 11

Table 2: Submission type and numbers 13

Figures

Figure 1 Aotearoa New Zealand's pathway to carbon zero, from the discussion document 9

Figure 3: Submission type 13

Figure 4: Responses to each section of the discussion document 14

Executive Summary

The Ministry for the Environment (MfE) commissioned *Allen + Clarke* to analyse submissions received on its discussion document *Te hau mārohi ki anamata – Transitioning to a low-emissions and climate-resilient future* (the discussion document). The discussion document detailed the proposed new strategies and policies that the Government is considering including in the emissions reduction plan, which will be published by 31 May 2022.

This report summarises views submitted during the consultation, which ran from 13 October to 24 November 2021. It has been used by government agencies to guide the development of the emissions reduction plan.

Submissions received

MfE received 10,050 submissions on the discussion document. Submissions were coded against a framework based on themes and the questions in the discussion document. MfE also held 19 webinars on the emissions reduction plan, including seven specifically for Māori, and ran a social media campaign to promote the consultation.

Most submissions were from individuals (9,479), including more than 7,300 submissions that drew on the three most widely used form templates created by the Green Party, Forest & Bird and the World Wildlife Fund. These form submissions can be summarised as promoting nature-based solutions (eg, restoring wetlands as a carbon sink), regenerative agriculture, an equitable and Te Tiriti-based transition, and enabling households to reduce their personal emissions through urban design, and transport and energy mode shifts.

Major themes

Most submitters wanted the Government to take more urgent and more ambitious climate action in the emissions reduction plan. They cited the successful 'go-hard and go-early' approach to the COVID-19 pandemic and wanted the Government to use the same clear, committed and well-funded approach to reducing Aotearoa New Zealand's emissions.

There were high levels of support for the discussion document's proposals, although many wanted targets to go further, sought more detail and wanted more support to implement the plan. There was strong support for an equitable lens across the entire emissions reduction plan and for specific sectors and policies.

Individual submissions generally focused on advocating for transformational, cross-sector changes that would have wider benefits than reducing emissions, for example, promoting wellbeing through improved urban design and enabling active transport. The broad, economy-wide implications of emissions reduction were also reflected by the many suggestions for more coordinated, cross-sector approaches by the Government.

Another common theme was the importance of a genuine partnership approach between the Crown and iwi. For Māori submitters a partnership approach was more than consultation and involved supporting Māori to influence decision-making and scale up Māori-led initiatives. Many submitters, including Māori and other submitters, emphasised the need for the Government to consider and

support a kaupapa Māori approach – which is more holistic – and integrate mātauranga Māori concepts.

Many submitters acknowledged that rural communities had less scope for reducing their emissions than urban centres. While reducing biogenic methane by reducing stock numbers was strongly supported, this was balanced by calls to support the dairy industry to transition to a low-emissions economy. Many individuals appeared unaware of the He Waka Eke Noa – Primary Sector Climate Action Partnership (He Waka Eke Noa) process and were critical of the lack of agriculture content in the discussion document.

Industry submitters largely discussed the challenges they expected from the transition to a low-emissions economy. These commonly included policy uncertainty and regulatory changes, energy security, cost barriers to accessing low-emissions technology, a lack of suitable alternatives to high-emissions technology and the skill-base of the labour market. Because of this, industry submitters often suggested more support for training staff, tax-incentives for green technology, more investment in research, better information to support decision-making and targeted funding to manage transitions in their area.

Energy security was commonly referenced by industry as a priority for Government action. Many submitters were concerned that the sector would not be able to handle increased demand for electricity, meet renewable generation targets, and provide electricity affordably and reliably to meet industry needs. Some industry submitters, particularly in heavy manufacturing, said that if the cost to decarbonise the energy required for production processes did not fall, their business may no longer be economically viable.

Most industry submitters supported working more closely with government. Some submitters specifically recommended more targeted or nuanced consultation with stakeholders, as opposed to more traditional forms of public consultation on technical climate concerns.

Overview

Introduction

The Government is required by the Climate Change Response Act 2002 (CCRA) to publish an emissions reduction plan by 31 May 2022.[1] The emissions reduction plan will be a plan for all New Zealanders and will require action across the economy and all sectors of society. This plan will outline how Aotearoa New Zealand will reach its first proposed emissions budget (2022–25) and put us on the path to meet our second and third emissions budgets.

The transition will impact all sectors of the economy and so will the emissions reduction plan. Under the CCRA, the emissions reduction plan must include:

- sector-specific policies to reduce emissions and increase removals
- a multi-sector strategy to meet emissions budgets and improve the ability of those sectors to adapt to the effects of climate change
- 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
- any other policies or strategies that the Minister of Climate Change considers necessary.[2]

Individuals, households and businesses must come on board to make the necessary changes and adopt new ways of doing things, and government policy settings are also critical to make sure the transition happens in a cost-effective way.

Since the final advice of the Climate Change Commission (the Commission) was published in June 2021, conversations have been under way across government about how Ministers and agencies can support emissions reductions in their portfolios – and what could be included in the emissions reduction plan. Figure 1, from the discussion document, shows the multi-sector strategy to achieve carbon zero.

Public consultation

In October 2021, the Ministry for the Environment (MfE) published the discussion document *Te hau mārohi ki anamata – Transitioning to a low-emissions and climate-resilient future* (the discussion document). The discussion document detailed information on the proposed new strategies and policies the Government is considering including in the plan.

MfE held a public consultation on the discussion document from 13 October to 24 November 2021. People were invited to submit views on the discussion document by email or using the public consultation website Citizen Space. Two options were provided on Citizen Space:

- *Quick submission*. This asked three high-level questions: what was the most important element for the emissions reduction plan, what new initiatives should be included, and what were the main opportunities and impacts for climate action.

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1 Climate Change Response Act 2002, S5ZG (1)

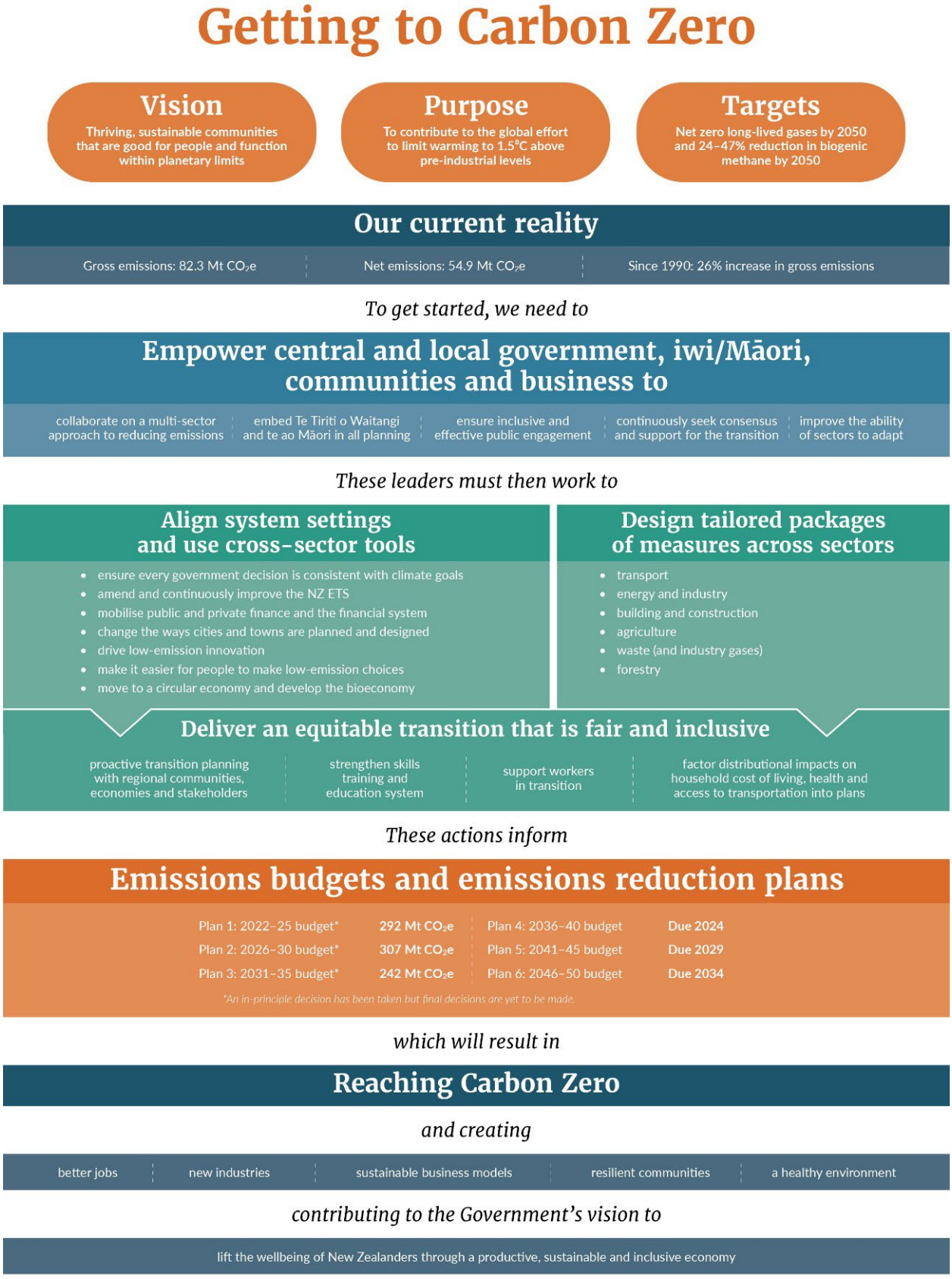
2 Climate Change Response Act 2002, S5ZG (3)

- *Shape the emissions reduction plan*. This asked 114 questions across 18 areas. These related to high-level national strategies, system settings and cross-sector tools, and transitioning key sectors. The full list of questions is attached as annex A. There were some questions with a Yes/No option followed by the opportunity to write a free text comment. Annex B includes the full list of Yes/No questions from Citizen Space, and individual questions are also included within the relevant sections of this report.

MfE also held 19 webinars and workshops as part of the emissions reduction plan consultation. This included several overview webinars and some sector-specific sessions, including energy and transport, and seven sessions specifically with iwi/Māori on a variety of topics. Overall, 1,876 people participated in these sessions.

MfE ran a social media campaign to support engagement in the consultation. This campaign generated 780,000 impressions across 73 organic (non-paid) social media posts and 21 paid ads on Facebook and Instagram. There were more than 82,000 views across eight videos, which featured the Minister of Climate Change and other stakeholders. MfE also sent approximately 4,500 emails to stakeholders promoting the public consultation. The consultation website attracted more than 21,000 visits.

Figure 1 **Aotearoa New Zealand's pathway to carbon zero, from the discussion document**



This report

This report summarises the submissions received during the public consultation in four parts.

Part 1: Overview

This introduces the report and summarises the overall submissions. It also contains a section on key themes and messages from the consultation. Many of these themes recurred in responses within specific sections and in cross-cutting or high-level submissions. They may, therefore, appear in more than one section of this report as appropriate.

Part 2: Meeting the new zero challenge

This section summarises views related to the proposed key components of the Government strategy to transition Aotearoa to a low-emissions and climate-resilient future. This includes the proposed pathway to meeting the emissions budgets, and how the Government will work with its Te Tiriti o Waitangi (Treaty of Waitangi) partners and ensure the transition is equitable.

In Parts 2–4, each section summarises the key themes and messages from the consultation. This is followed by a summary of views on the relevant questions posed in the discussion document.

Part 3: Aligning system settings and using cross-sector tools

This section summarises views on the proposals for how the Government could ensure that all systems in Aotearoa point toward low emissions (see box 1).

BOX 1: SYSTEM SETTINGS AND CROSS-SECTOR TOOLS

Moving to a low-emissions future means transforming all sectors of the economy. All our systems must point towards low emissions.

- **Government accountability and coordination** is essential for a well-resourced work programme that makes these system-wide changes.
- **Funding and financing** are a catalyst for significant cuts in emissions.
- **Emissions pricing** plays an important role in changing investor and consumer behaviour.
- **The planning system** controls how we use land, and the emissions that flow from those land uses – both urban and rural.
- **Research, science and innovation** generate knowledge, and new approaches and practices.
- **Behaviour change** by organisations, businesses and individuals is critical to achieving net zero.
- **Move to a circular and bioeconomy** to create economic value while restoring the natural systems.

Part 4: Transitioning key sectors

This section summarises submissions on the proposed tailored measures to transition key sectors, help industries maximise opportunities and transition, and how the Government could ensure that all systems in Aotearoa point toward low emissions (See box 2).

BOX 2: KEY SECTORS TO TRANSITION

The emissions reduction plan will include tailored measures to help industries maximise opportunities and transition. This section outlines the work under way and other possible measures for the following sectors:

- **Transport –** changing the way we travel, improving our passenger vehicles and promoting a more efficient freight system
- **Energy and industry –** preparing our highly renewable electricity sector to power the low-emissions economy, moving away from fossil fuels, and speeding up industrial decarbonisation through fuel switching and energy efficiency
- **Agriculture –** continuing to develop and adopt the technology and practices that keep this sector on track to meet the biogenic methane targets and reduce long-lived emissions
- **Waste and HFCs –** supporting the waste hierarchy, prioritising the reduction and diversion of waste from landfill (particularly organic), and reducing hydrofluorocarbons (HFCs) with high-global-warming potential
- **Building and construction –** reducing building-related emissions and realising health or other co-benefits where possible
- **Forestry –** establishing forest sinks that remove carbon from the atmosphere and promote biodiversity and wider environmental outcomes where possible.

Quantifying submitters

When referring to submitters, the report quantifies support for positions based on the classifications in table 1. These classifications are relative to the number of responses received. For example, whether a question received several hundred responses or less than 100, the same terms are used relative to the proportion of responses to that question. This quantification excludes the uniform content from form submissions but includes unique content from these form submissions. An indication of the numbers of responses for each section is provided in section 3, 'Summary of submissions' and at the beginning of each section in parts 2–4.

Table 1: Quantification of submitters

Classification	Definition
Few	Fewer than 5% of submitters on this topic
Some	5 to 25% of submitters on this topic
Many	26 to 50% of submitters on this topic
Most	More than 50% of submitters on this topic
All	100% of submitters on this topic

Methodology

MfE collated the total submissions received through Citizen Space and its consultation inbox. Submissions were reviewed to identify those that were unique and those that were form submissions. Form submissions were further reviewed for unique content, which was extracted for analysis alongside other unique submissions.

Submissions were uploaded into NVivo 12 qualitative analysis software and coded against a framework based on themes and the questions in the discussion document. The uniform material in form submissions was coded once, while each unique comment was also coded. This was tested on a sample of submissions and further refined with some additional codes added. Throughout the coding process, the database was checked against the coding framework to ensure the submissions had been coded accurately and consistently, to highlight any issues in the coding framework that required adjustment. From this, specific reports by theme and question were exported from NVivo and used to inform this report. This included the unique content from form submissions.

Coding of a small number of submissions continued in parallel to analysis. The content of this coding was checked for new information, and to ensure submissions analysis was representative of both thematic content and comments on the discussion document questions already analysed. Any additional themes were then added to the report.

A small number of submissions that were received in an incompatible format were cleaned before being uploaded to NVivo. Some were unable to be coded in the software so were reviewed separately. A small number of submissions were withdrawn after the consultation closed and were excluded from this report.

Limitations

This report has integrated responses from across the submission avenues, where possible. Most submissions came from individuals (9,479 or 94 per cent). Most of these were short and focused on high-level views or priorities. Approximately 571 organisations made submissions. These tended to be longer and more detailed, especially in relation to more technical questions within the discussion document. In general, the more technical the subject matter, the fewer the responses received. This may have led to participation bias, whereby submitters on questions with fewer responses were less representative of the total submissions.

While submissions on Citizen Space included information on regions and organisation type, this data was not collected for other submissions. No data was collected on age or gender.

Summary of submissions

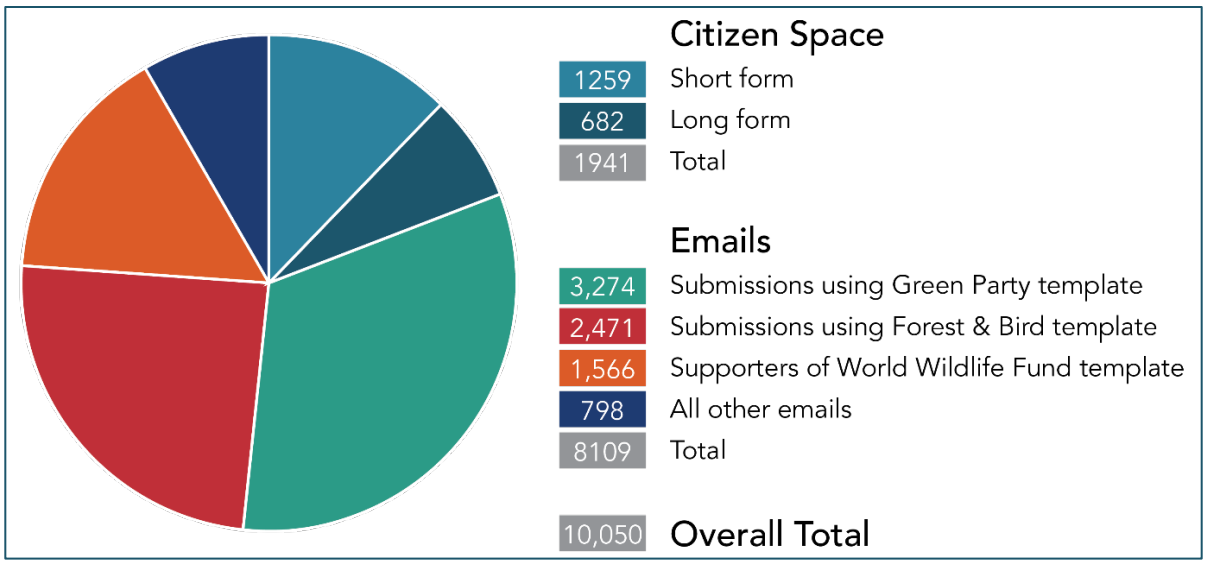
MfE received 10,050 submissions during the consultation on its discussion document. These submissions included individuals, community groups, iwi, companies and sector organisations, local government, academics and non-governmental organisations. Therefore, these submissions represent more New Zealanders than the number received.

There were three main types of submissions as detailed in table 2: Submission type and numbers.

Table 2: Submission type and numbers

Submission type	Number
Quick submission – have your say and shape the emissions reduction plan ('quick submission') This Citizen Space questionnaire had three questions.	1,259
Shape the emissions reduction plan ('long-form submission') This Citizen Space questionnaire had 114 questions across 20 thematic areas. Submitters also provided 306 supporting documents through this channel.	682
Email submissions More than 80% of submissions were made directly to the MfE consultation email inbox. This included 798 unique submissions and 7,311 form submissions, which also contained unique information. The form submissions were prepared by: • the Green Party • World Wildlife Fund • Forest & Bird • Dairy NZ • Go Eco • Zero Waste Network and The Rubbish Trip	8,109

Figure 2: Submission type



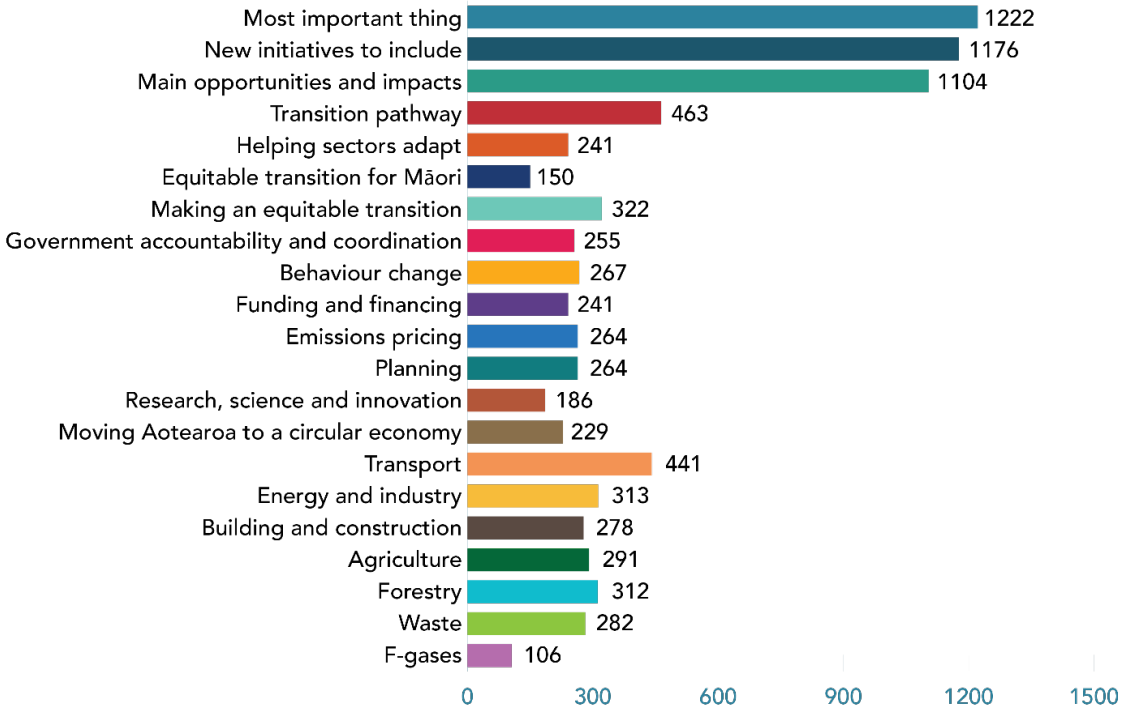
Submissions varied significantly in the level of detail provided. The quick submission responses generally covered all three questions while long-form submissions generally addressed specific areas of interest only. For instance, on Citizen Space:

- 10 questions had between 200–299 responses
- 46 questions had between 100–199 responses
- the remainder had fewer than 100 responses each.

Email submissions similarly ranged from those that covered every question in the discussion document to one-line responses.

Figure 3 provides an overview of submission numbers made on each section of the discussion document. This includes submissions by email and Citizen Space.

Figure 3: Responses to each section of the discussion document



Submissions made by email included: comprehensive submissions that covered all questions from the discussion document, only the three questions in the quick submission, one-line comments, and drawings from children on what climate change meant to them.

There were 2,471 submissions using a Forest & Bird template. These had uniform content and the option for a personal comment. The personal comments were considered separately. An example with no personal comment is attached as annex C.

There were 3,274 submissions using a Green Party template. These covered seven topics with model content that submitters could edit to include personal views. The personal comments were considered separately. An example with no personal comment is attached as annex D.

There was one submission from the World Wildlife Fund with 1,566 signatures in support.

The consultation also received 450 submissions, including 157 drawings, by children from the Anglican Movement. A sample is attached as annex E. The children expressed an anxious need for

rapid and ambitious action, including illustrating potential negative consequences of insufficient action (eg, increased natural disasters such as fires). Children also illustrated their idea of a positive future if sufficient action was taken (eg, flourishing natural environments filled with wildlife). The children proposed free public transport opportunities for young people, and support for active transport such as biking or scootering.

Several other form submissions were received. These were based on material prepared by Oxfam (103 submissions), Zero Waste Network and The Rubbish Trip (17 submissions), Dairy NZ (10 submissions) and Go Eco (15 submissions). Some other submissions used identical material but did not identify the source of the material. These were approximately 20 submissions. These form submissions were coded and analysed in the same way as unique email submissions and long-form submissions.

Demographics

Demographic information was collected from submissions made through Citizen Space but was not collected from email submissions. Of the total number of submissions classified into submitter type:

- 9,479 were from individuals (1,174 in the quick submission, 382 in the long-form submissions, 7,923 from email submissions)
- 571 were from organisations (85 in the quick submissions, 300 in the long-form submissions, 186 from email submissions).

Of those submitters who specified their region through the online consultation, most were from Auckland, Wellington, Canterbury, Otago, and Waikato (75 per cent in total). For the long-form submissions for each region of Gisborne, West Coast and Southland, less than five people submitted.

Twenty submitters indicated on Citizen Space that they were from outside Aotearoa. These submitters included some businesses that operated within Aotearoa, sector organisations with New Zealand members, and some individuals.

Overall themes and key messages

More – and more urgent – action was needed

Most submissions emphasised the urgency of responding to climate change. Many submitters referenced the Government's declaration of a climate emergency. They said that more Government action was needed to reflect this declaration.

Many submitters also referenced the speed and scale of the Government response to the COVID-19 pandemic. These submitters said that the actions taken under the emissions reduction plan needed to match the same speed, scale and commitment as the COVID-19 response if Aotearoa was to be effective in responding to climate change. Many of these submitters also said that the policies and actions in the emissions reduction plan were not yet ambitious enough.

> I want to see Aotearoa New Zealand taking bolder action on climate change. We need urgent change, with measurable goals, accountability across all sectors, and no more delays. – Individual

Systems change over individual change

Across the consultation, many submitters raised the need to focus on systems-level change to drive broad emissions reductions. This was generally considered more efficient and would avoid the risk of (wrongly) trying to pick winners. For example, submitters favoured transforming the transport system through greater mode shift than simply substituting internal combustion engine (ICE) vehicles with electric vehicles (EVs), which would not improve congestion and may make it worse. Similarly, submitters favoured avoiding or reducing waste at source over improved processing at landfills.

While submitters supported behaviour-change initiatives, there was a call to prioritise this at the systems level rather than at the individual level. Many submitters shared examples of individual, community and corporate climate action already under way. Collectively, New Zealanders were taking climate action in many ways. These examples were frequently accompanied, however, by requests for support and leadership from the Government to scale up, extend or promote these actions. There was support for extending existing Government initiatives and funds that enabled community or private sector action.

Realise the co-benefits of climate action

Submitters wanted the Government to consider and maximise the co-benefits of taking climate action. These included:

- health co-benefits: from higher levels of safe, active transport; reduced air pollution; and warmer and more energy-efficient homes that were also healthier to live in
- biodiversity co-benefits: from increased native afforestation and protecting wetlands as carbon sinks, and increased pest control to enhance the carbon sequestration of native forests
- accessibility co-benefits: from more integrated and regular public transport and urban form.

Embed Te Tiriti and te ao Māori approaches

Many responses, including from Māori and other submitters, emphasised the need for genuine Treaty partnership. This required more than treating Māori as 'just another stakeholder' group.

Across many sectors, submitters also wanted the Government to consider and support a kaupapa Māori approach, which is more holistic, and mātauranga Māori concepts.

> We don't always need 'new' initiatives, often we need investment in solutions that are already working. For instance, Te Ao Māori is not new, and yet it has been heavily overlooked as a solution, even those [sic] at its very essence it is about protection of Papatūānuku. More investment in by Māori for Māori solutions [...] will benefit everyone. – Individual

More education was needed

Many submitters raised greater education and information as fundamental to achieving the goals of the emissions reduction plan. This emerged across most sections – particularly in the sections on equitable transition, behaviour change, agriculture, waste, and building and construction. Most of these submitters recommended climate-change education programmes in school. General public education was also raised by some submitters to enable people to understand how their behaviour contributes to emissions and what actions they might be able to take to reduce them.

> Climate change education at schools is of particular importance for the long-term development of society towards a sustainable future. We must engage the education system towards a systematic transformation that puts education for sustainability, social justice, responsibility, and climate change awareness at the centre of the education system. – Organisation

Some submitters also noted the importance of public information and communication about the country's climate and emissions reductions efforts. Examples were drawn from the Government's response to COVID-19 and how a similar communication strategy should be adopted. This would support behaviour change, build awareness and buy-in to the value of an equitable transition. Training was also emphasised across many sectors as a key intervention to both facilitate the transition and mitigate some of the negative economic or employment impacts.

Support for specific policy proposals

In general, all the specific proposals were supported, but most individuals called for more ambitious targets for timeframes and the amount of emissions reduction. Many called for additional or more specific targets, although this was balanced by those who preferred fewer, broader targets consistent with a systems-approach.

Solutions for urban and rural areas were different

Many submitters also said rural and urban communities faced different challenges from transitioning to a low-emissions economy. So, solutions needed to be different as well. A 'one-size-fits-all' approach would not suit Aotearoa. For example, many urban solutions, such as increased and integrated public transport, may not be feasible in less populated areas of the country.

Equitable transition across and within sectors

There was a strong focus on enabling an equitable transition. In addition to section 7, 'Ensuring an equitable transition', many submitters raised equity within specific policy proposals and sectors.

> It is critical that all ministries apply an equity lens to policy interventions. – Iwi/Hapū

For some submitters, this also applied to the consultation process. These submitters wanted more direct engagement and more diverse voices included in the design of strategies and policies.

Tourism was missing and needed support

Some submitters said tourism was one sector that was missing from the discussion document but needed Government action. Submitters who raised this said the sector was already struggling under COVID-19 restrictions. These submitters highlighted the voluntary Tourism Sustainability Commitment, which operators can sign up to with the Tourism Industry Association. Some submitters wanted Government support to decarbonise the sector or prioritise eco-tourism. Some submitters also wanted an equity focus when considering tourism, noting both the Māori economy and rural communities were heavily invested in the sector. Counter to this, other submitters said international tourism was a major contributor to emissions globally and in Aotearoa. They suggested the Government should discourage international tourism, including through a visitor levy, and promote domestic or long-stay tourism.

Broader economic models

Many individual submitters wanted different economic models applied to the transition. These included moving away from a focus on gross domestic product (GDP) to a more wellbeing approach, circular economy principles, less overall consumption and more 'buy local' approaches.

Some submitters wanted the Government to also focus on consumption-based emissions to help people understand the impact of their personal choices and to break down sectoral silos. These submitters argued a production-based approach to emissions did not reflect the full emissions generated from the extraction, production, transportation and retail sale of products; or emissions generated from overseas production. A consumption-based approach would make it easier for people to factor emissions reduction into their consumption choices.

Some submitters commented on gross emissions versus emissions per capita and noted that population management could be a way to manage gross emissions. Some submitters were concerned that immigration negatively impacted the country's total emissions and suggested managing population growth could be part of the emissions reduction plan.

Nature-based solutions

Many submitters wanted the Government to adopt a nature-based solutions approach to climate action. In addition to many unique submissions that supported this approach, it was also a theme in the Green Party and Forest & Bird template submissions. This theme cut across many thematic and sectoral areas covered by the discussion document.

Beyond the proposals in the discussion document, submitters supported restoring wetlands – especially native wetlands. A few specifically suggested support for farmers to retire less productive areas and revert to wetlands. Wetlands were described as an important carbon sink as well as providing habitats for native birds and other fauna. A few submitters supported the introduction of the proposed National Policy Statement for Indigenous Biodiversity to prevent the destruction of wetlands.

> Wetlands should be restored and preserved, as they play an important role in climate change adaptation through capturing and storing carbon to reduce atmospheric greenhouse gases, and providing resilience to hazards such as flooding, storm surge and coastal inundation. – Individual

Many submitters also suggested exploring opportunities to sequester carbon through the country's oceans including through a blue carbon strategy.

International contribution and trade

Many submitters wanted Aotearoa to 'play its part' in contributing to the global effort to reduce emissions. For some, this included considering historical contributions.

Some submitters saw opportunities for Aotearoa to become world leaders in emissions reductions, particularly in agriculture. Submitters referenced the 'clean, green' image and the opportunity to increase the country's competitive advantage by living up to this through sustainable practices.

> New Zealand could be a world leader at rapidly reducing out [sic] emissions and become a model for the rest of the world. Also it would show a commitment to doing our part to protect our pacific island neighbours from the worst impacts of climate change. – Individual

Some supporters wanted the Government to further support our Pacific neighbours in both mitigation and adaptation.

Meeting the net-zero challenge

Transition strategy and pathway to 2050

Key themes and message

Most submitters supported the proposed transition pathway outlined in the discussion document but wanted it to be more ambitious to meet the Paris Agreement's goal of limiting warming to 1.5 degrees above pre-industrial levels. These submitters wanted the Government to be bold and for the plan to convey a sense of urgency in responding to the climate emergency. They sought more detail and less room for interpretation in the plan, with clarity for each sector. This included strategies, goals, timelines, transparent information sharing, and more details on how the proposed pathway would be implemented. Submitters called for rapid action and partnerships to deliver the transition, using a mixture of rewards and penalties.

We must be ambitious. We must make significant changes and we must start now. The COVID-19 global pandemic has proven the willingness of New Zealanders to band together and make sacrifices in times of need. We are ready to make the sacrifices necessary to transition to a low-emissions future. All we need now is clear direction and communication from government. – Individual

Other ideas included the need for practical solutions for the public, the need for the science to be clearly communicated, and the need for the transition to be easy to understand so that people could get behind it. Linked to this, a few submitters wanted consumers and producers to be accountable for the full cost of emissions resulting from their activities, and to recognise the benefit of any emissions reductions or sequestration resulting from those activities.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 463 submissions (including at least 145 organisations) from emails and Citizen Space.

Principles to guide the emissions reduction plan

Support for specific proposals

89 per cent of 275 Citizen Space submitters agreed the emissions reduction plan should be guided by a set of principles. (Question 1)

Overall, most submitters agreed the emissions reduction plan should be guided by a set of principles. Many submitters broadly agreed with all five principles suggested in the discussion document and provided some caveats or amendments. Some submitters suggested additional principles for consideration.

Some submitters questioned how the principles would be implemented and wanted greater detail. Some other submitters suggested amendments or disagreed with certain principles. A few submitters suggested various changes to the order of the principles.

Principle 1 – A fair, equitable and inclusive transition

A few submitters questioned the use of 'fair' in this principle, given the significant changes required, and questioned how fairness would be determined. These submitters expressed concerns that fairness may 'water down' proposals or delay action. A few submitters raised the need for this principle to specify a just transition. A few other submitters commented on the need to avoid unnecessarily penalising groups or industries where lower-emissions technology does not yet exist, or was not yet commercially available, to the extent that they become uncompetitive. A few submitters said the country must avoid leaving any burden for future generations.

Principle 2 – An evidence-based approach

A few submitters suggested that the precautionary principle should be recognised. A few other submitters commented that data was needed to enable an evidence-based approach at a local level. Others noted that data needed to be highly credible, and science based, to ensure maximum sequestration rates at least cost. A few submitters stated that a risk-based approach should be applied. A few submitters said that this principle should include consumption emissions to help people understand the impact of their personal choices.

Principle 3 – Environmental and social benefits beyond emissions reductions

Some submitters commented that this principle should specify the need for a circular economy – to improve nature, maintain biodiversity and have nature-based solutions. A few submitters suggested adding 'wellbeing'.

A few submitters were concerned that providing for co-benefits was too broad and ambiguous and could potentially distract from the key objective of emissions reduction. Conversely, a few other submitters suggested including economic and health benefits, and taking a holistic and systems approach. Connected to this, submitters sought guidance on how the principles would be used to prioritise and balance potentially competing interests and their impacts.

Principle 4 – Upholding Te Tiriti o Waitangi

A few submitters commented that this principle and other principles must actively support and respond to Te Tiriti and the articles. A few submitters suggested the inclusion of Tino Rangatiratanga and Mana Motuhake.

Principle 5 – A clear, ambitious and affordable path

Many submitters suggested removing or rewording 'affordable'. The reasons for this included: 'ambitious' and 'affordable' were in conflict, affordability and how this is determined is ambiguous, affordability does not align with what needs to be done, financial sacrifices will have to be made, and

the long-term cost of inaction could result in higher overall cost. A few submitters suggested a least-cost approach, or using different terms such as ‘sustainable’, ‘cost-effective’ and ‘efficient’ (highest amount of emissions reduced per dollar invested) rather than ‘affordable’.

Many submitters supported having predictable and stable policies, while a few submitters emphasised the importance of being resilient, flexible and responsive given the complex system and rapidly changing technology.

A few submitters suggested this principle could include the need to focus on reducing demand and behaviour change. A few other submitters commented that ambition could extend both nationally and internationally.

Additional principles

Many submitters suggested these principles, or an additional principle, should convey a sense of urgency to ensure we meet the commitments.

> We don’t disagree with any of the five principles, except that we feel they lack a sense of the scale and the urgency required and lack a strong statement of determination by the Government on behalf of all who live in Aotearoa New Zealand to achieve a radical shift in the way we live to set us on the right path. – Business

Some submitters suggested a wide variety of other principles including:

- to commit Aotearoa to actual emissions reductions which result in keeping temperature rise below 1.5 degrees
- Aotearoa doing its ‘fair share’ to reduce overall global emissions. This included avoiding making global emissions worse in the journey to meet domestic emission-reduction targets, for example, closing local firms if the activity was likely to relocate overseas. A few submitters also mentioned the responsibility to support Pacific neighbours
- to prioritise gross emissions reductions at source, in accordance with the Commission’s advice. To invest in the local economy and infrastructure, and enhance long-term sequestration rather than purchase international abatement
- to encourage necessary transitions through rewarding adopters
- to prioritise permanent reductions over temporary reductions and temporary sequestration. To include policies and activities that build foundations for emissions reductions that are long-term intergenerational solutions
- to have a cooperative government approach: to partner with business and local government, to collaborate and work across sectors, to include a range of multi-sector options for responding, and to align tools, regulation and guidance
- to have goals and targets so the public know what they can do and what is expected of them, including reducing consumption and reusing resources.

Private sector action to reduce emissions

Overall, submitters suggested a range of actions to reduce emissions and remove barriers to support decarbonisation. Many submitters discussed regulatory barriers and the need for regulation across sectors to mandate private sector action. Some submitters supported mandatory data collection and reporting on emissions by businesses; with a few submitters also suggesting the need for standards,

codes of practice, risk assessments, accreditation, and the government leading by example. A few submitters also suggested that regulations should not stifle innovation and creativity to develop new ways to reduce emissions.

Cost was a barrier. Many submitters suggested funding, tax incentives or subsidies to enable actions to reduce emissions, sequester carbon or depreciate assets. These submitters provided examples of changes to regenerative farming, planting native ecosystems or investing in renewable energy. For fossil fuels, many submitters suggested removing all subsidies and introducing tax disincentives. Some submitters commented on the need for funding and support for scientific research and development into decarbonisation.

Another barrier was uncertainty. This included a lack of knowledge about what reducing emissions meant, the upcoming changes, and what businesses needed to do and why. Some submitters suggested initiatives such as communications strategies, education and training, sharing information and resources, tools to measure carbon footprint, mentoring and advisory services, building communities of practice, and governance support. A few submitters suggested publicising and rewarding businesses that were reducing their carbon footprint. A few other submitters sought better consumer information for products and services – including labelling of emissions over the full life cycle of products, and country of origin and manufacture.

> A lot of businesses don't know where to begin with reducing their emissions, or are under the impression that it will cost them a lot. This is a barrier that could be removed by providing more education, training and resources along with incentives to transition. – Community/NGO

Further measures to close the gap between proposals and the emissions budget

Submitters suggested various ways to help close the gap between emissions reductions from the proposals in the discussion document, and those required to meet the emissions budgets. Many submitters wanted the Government to do more to support businesses, community groups, and individuals with low-carbon behaviours. Ideas included front-end incentives for businesses to design for the environment or 'design-out' energy use, supporting community groups with guidance or training, and tangible day-to-day actions for individuals.

A few submitters commented on the uncertainty of the transition and the inability to plan due to the lack of a pathway with targets, timeframes and long-term strategy. These submitters sought as much clarity as possible about what the future would look like, including co-designing strategies with sectors, as well as political consensus on the emissions reduction plan and budgets.

A few submitters wanted financial support for individuals and families (eg, help to buy e-bikes or retrofit their homes to meet healthy homes standards). A few submitters supported incentivising investment in 'green' funds and the low-emissions economy.

A few submitters mentioned the New Zealand Emissions Trading Scheme (NZ ETS). While some wanted to make better use of the scheme to ensure businesses take meaningful action, others wanted a focus on stopping emissions and offsetting them in Aotearoa. A few others wanted to include agriculture in the NZ ETS.

> It's a shame that the NZ ETS is so often at the front of the options for reducing emissions. That sends the message that we can buy our way of this. The right mix of actions should be about

> policies and investment in innovative solutions and infrastructure and be supported by ETS where we can't find an alternative, not the other way around. – Individual

A few submitters spoke of the need for public education about climate change to make it clear what is at stake, and national daily communications on statistics and progress towards targets. A few other submitters commented on the need to upskill the public and private sector workforce to ensure the country has the capacity and technical expertise to achieve the emissions reduction plan. Linked to this was the need for a school curriculum on sustainable wellbeing, leading to a range of career paths for 'clean' jobs, alongside access to skilled migrants.

Nature-based solutions

Most submitters supported the use of nature-based solutions – particularly those that enhanced both climate and biodiversity – noting the two were closely linked.

> It is correct to prioritise sequestration as a key element in meeting our climate goal; But to do so without also including improved biodiversity risks winning the climate prize only to find that ecological collapse makes it worthless. – Individual

Conversely, some submitters believed the two issues should be treated separately to ensure a focus on achieving reductions in emissions. A few other submitters noted that, unlike carbon, there was no monetary value placed on biodiversity and there was an opportunity to create this value for biodiversity.

> A longer-term view is encouraged to prioritise indigenous biodiversity supporting options. A system to create and monetise nature/biodiversity credits as a higher net value alternative to the current ETS could significantly shift and accelerate investment back into Aotearoa New Zealand so we take responsibility for our own emissions rather than pay others overseas. – Industry body

Many submitters argued for stronger mechanisms to improve native forest regeneration, discussed further in section 19, 'Forestry'. Some others focused on the need for regenerative agriculture, discussed further in section 18, 'Agriculture'. A few submitters commented on initiatives to support both biodiversity and sequestration, such as the Predator Free 2050 work.

Many submitters wanted more emphasis on nature-based solutions in the emissions reduction plan. Many submitters wanted to acknowledge and support the ability of alternative natural ecosystems to sequester carbon. A range of solutions were suggested, including protecting marine ecosystems, riparian planting, ensuring healthy soils, and restoring wetlands and peat bogs. Some submitters suggested adding these solutions to the NZ ETS. A few submitters suggested analysing regional landscapes to identify priority areas for the emissions-reduction response.

A few submitters commented on the need to greatly increase Māori governance of resources and climate action. A few submitters noted the importance of building relationships with tangata whenua and ensuring a te ao Māori approach to biodiversity to bring more equitable results. This included ensuring iwi are empowered to provide advice and that solutions are guided by mana whenua.

A few other submitters emphasised the need for a holistic view across government where there were different policy and legislative drivers. These submitters provided the example that legislation designed to accelerate new housing must be supported with legislation to protect and restore nature and biodiversity.

Adaptation within the transition

While this consultation focused on the emissions reduction plan, the discussion document also asked two questions on adaptation to climate change. This recognised that emissions can be reduced in ways that increase resilience, or in ways that increase the impact of the risks of climate change.

The emissions reduction plan will integrate adaptation considerations across each sector. This report presents submissions on adaptation as part of the overall transition strategy and pathway to 2050.

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 241 submissions (including at least 79 organisations) from emails and Citizen Space.

Most submitters emphasised that acting boldly and with urgency should be the primary tool for both mitigation and adaptation efforts. The two should, therefore, be integrated rather than separate processes. Some submitters said, however, that mitigation should take priority over adaptation.

> 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. – Local government

Many submitters focused on the building and construction sector for adaptation efforts. They noted the importance of planning, namely in avoiding construction and urban intensification in high-risk areas and coastlines. These submitters also supported the role nature-based solutions, such as wetland restoration and mangrove protection, can play in combatting growing sea levels. Some submitters indicated specific building techniques and materials that could assist in mitigating and adapting to climate change or creating smaller and moveable buildings.

Some submitters raised risks that action taken now could create problems in the future. These included concerns over:

- relying on forestry to offset domestic emissions instead of prioritising gross emissions reductions; over-reliance on exotic plantations posing fire risk or increased pests
- purchasing offshore emission-reduction units instead of funding domestic reduction
- over-reliance on electric vehicles (EVs), which may create future issues with lithium batteries
- failing to consider whole-of-life emissions or take a life-cycle assessment (LCA) approach
- developing infrastructure with carbon-filled, short-life materials (eg, seawalls in urban intensification efforts).

Enabling an equitable transition for Māori

Key themes and messages

Māori submitters expressed support for a Te Tiriti approach that included: "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".

A key message from Māori submitters was that partnership differed from being consulted or considered 'just another stakeholder group'. A few submitters considered that 'proper' consultation should be frequent, culturally appropriate, sufficiently resourced and occur early in the policy process.

> Co-design is also part of the partnership toolkit. This involves Iwi/Māori working through various issues with officials, setting up work programmes and monitoring and evaluating the work. What it is not, is being "consulted," which means being given documents or shown powerpoints and being told what the draft advice is and putting in submissions which are ignored. – Industry body

Beyond the themes of governance and partnership, Māori submitters also described kaupapa Māori approaches to emissions reductions. Notably, a kaupapa Māori approach was holistic, recognising "that the wellbeing of our whānau will involve responding to multiple realms, as will our response to climate change".

Some common themes for policy priorities included nature-based solutions that had positive cultural, economic and environmental outcomes; focusing on the circular economy, empowering communities to reconnect with te Taiao, increased iwi/hapū-led climate research; and engaging more appropriately with relevant stakeholders on te ao Māori world view and mātauranga Māori.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 140 submissions (including at least 47 organisations) from emails and Citizen Space.

Priority issues and policies from an iwi/Māori perspective

The discussion document noted that the Commission recommended the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. It asked which strategies were a particular priority for whānau, hapū and iwi. A common theme from Māori submitters was that a kaupapa Māori approach was a holistic one, with a broad vision for the environment.

> We are role models of sustainable living and regenerative practices. We are world leaders in healing the mauri of te taiao through all our activities. Taiao initiatives for the hapū are underpinned by mātauranga Māori and customary practices which include the maramataka [Māori lunar calendar] and relevant atua Māori. We are leaders in sustainable development and investment. Our tamariki swim carefree and our whānau collect kaimoana. Our whenua is alive with native tree, birdlife and insects. Whānau role model our practices, being grounded and connected to te taiao. – Iwi/Hapū

Some Māori submitters considered this holistic approach was at odds with prioritising specific strategies and policies. However, some Māori submitters identified that strategies with the following characteristics would be more likely to be supported by Māori:

- strengthened partnership approach and active support for iwi/Māori
- Māori values and mātauranga Māori applied to the transition
- nature-based solutions used
- a variety of Māori voices involved in the design and development of the transition
- discretionary funding and support for Māori-led initiatives
- recognition of and enabling Māori to be kaitiaki over the natural environments within their rohe.

A few Māori submitters prioritised specific strategies for involvement or co-design, especially those that were more holistic or cross-cutting.

> Given the breadth of [our] interests, and the range of [our] businesses and investments, [we] expect 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 [we] 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 [our] takiwā. – Iwi/Hapū

Several Māori submitters noted that the Māori economy was diversified but with significant interests and investments in sectors that would be particularly affected by climate change and emissions reduction: agriculture, horticulture, forestry and fisheries. Therefore, a priority for partnerships was understanding where current and future regulatory changes would effectively be a cost or reduced opportunity to Māori landowners, and how Māori landowners would be assisted to transition.

This point was exemplified by some submissions on forestry. Submitters highlighted that the historic difficulty associated with capital intensive investment in multiply-owned Māori land had resulted in a significant area of the pre-1990 forest land in Aotearoa being in Māori ownership. Imposing differential regulation and climate-based constraints on development had impeded the land's value.

Priority actions for a Māori-led transition strategy

The Commission emphasised the importance of a Māori-led approach to the transition. As such, Māori submitters expressed expectations of being heavily involved in the transition process and supported in their own climate-change responses and strategies.

> Within [our organisation] 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 [our] whānui [sic] moving forward. – Iwi/Hapū

A common theme for priority actions was nature-based solutions within rohe that would reduce emissions, improve environmental outcomes and increase people's wellbeing.

> Through our actions we are actively seeking to restore balance with the natural world and work towards a just and sustainable future. All our mahi is underpinned by our mātāpono, the values that ground us to tikanga Māori. – Iwi/ Hapū

Support for a Māori-led transition strategy

Māori submitters acknowledged that the scale of change needed to reduce emissions required Government support to scale up Māori-led solutions.

> Through our climate policy work, we will be identifying key actions that need to be taken to ensure a just transition to a sustainable future. However, we will not be able to achieve these alone. For the scale of impact needed we will need resources, support, funding, appropriate time frames. The Government will be vital in supporting our climate action. – Iwi/Hapū

Some Māori submitters suggested ensuring whānau were resourced to be involved and to provide their skills and expertise in the development of these strategies. They also requested sufficient time and support be provided to ensure participation, noting that whānau volunteered their own time and knowledge to engage with and contribute to Crown processes.

Some Māori submitters suggested an innovation seed fund to invest in clean technology that will be developed in alignment with Te Tiriti o Waitangi. For example, expanding on initiatives such as the Green Investment Fund but with a te ao Māori lens and indigenous rights as a key value. These submitters suggested that funding should be open to iwi, hapū and other private investors.

Other suggestions on a Māori-led transition strategy included: using co-design strategies and mechanisms to monitor compliance and accountabilities against the emissions reduction plan, engaging early on research, development and implementation of approaches and frameworks linked to non-market approaches; involving a variety of Māori voices and bolster engagement; and providing resources and support for marginalised members of Māori communities (eg, rangatahi Māori, tangata whai ora, disabled communities, LGBTQI+ and at-risk members of Māori communities).

Information for Māori collectives, communities and businesses' emissions profiles

Among Māori submitters, a common theme was the importance of data collection to support decision-making and ensure compliance. While most Māori submitters expressed concern at the lack of information, a few noted they had a method already in place:

> [Our] 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] Rūnanga and whānau. – Iwi/Hapū

Some suggestions to support informed decision-making included: properly resourcing Ministry for Primary Industries to co-design an incentive system with iwi/hapū to increase uptake of native planting, district health boards and the Māori Health Authority working with hapū and iwi on data concerning climate-related health conditions and deaths, resourcing hapū and iwi to work with councils and research institutes to collect data on ecosystems and biodiversity across urban landscapes, and collecting data on the protection mechanisms currently in place or needed to protect endangered biodiversity and ecosystems in rohe.

Other submitters, including non-Māori, requested specific information to facilitate developing emissions profiles for Māori collectives, communities and businesses, including:

- how climate action impacted communities in terms of equity, equality, relationships, participation, and community

- a life-cycle assessment of emissions of goods and services, including extraction, production, distribution, consumption and end-of-life treatment
- reporting emissions from Māori land at a level that enabled landowners to identify the major sources of emissions and develop a clear plan for how to reduce emissions
- transport, housing, infrastructure and farming (industrial and regenerative).

A few submitters disputed the need for emissions profiles, stating that emissions profiles were a Western concept. They suggested focusing on people having relationships with the environment instead, and on tapping into Māori knowledge about living in a traditional circular economy.

Effective models of partnership with Māori

Most Māori submitters said that Te Tiriti partners were more than another stakeholder group, and this needed to be reflected in the emissions reduction plan. A few Māori submitters said the discussion document was unclear on who exactly treaty partners were, "using terminology such as Māori and iwi interchangeably". They said that "iwi are treaty partners established and mandated through the Treaty settlement process" and that the Tiriti partnership should be at a governance level.

A few Māori submitters said that a partnership approach required the Government to commit to "growing indigenous and Māori knowledge and research, and acknowledge, endorse and support the role of hapū and iwi mātauranga Māori and indigenous knowledge in the research, development, governance and implementation of climate activities, solutions and implementation".

Regarding effective models of Te Tiriti partnerships, some submitters referenced the Zero Waste Network and Para Kore, an organisation working towards zero waste. This organisation recognised the need to strengthen the 'rangatiratanga sphere' (as opposed to the 'kāwanatanga sphere' of Western laws, norms, values and institutions) where hapū and iwi can make independent decisions by and for Māori. Some submitters referred to examples from primary industries, including Bioplant Manawatu and a bio plant in Tairāwhiti. These were considered successful as they prioritised iwi and hapū rangatiratanga, for example, by not waiting for resource consent before engaging with mana whenua.

Other models included the Matike Mai Aotearoa consultations (The Independent Working Group on Constitutional Transformation), Whānau Ora, the Waikato River Authority and the Whanganui River's legal personhood. Submitters also highlighted a range of local government examples, such as the Waikato Regional Council's Stakeholder Collaborative Group.

Ensuring an equitable transition

Key themes and messages

Most submitters supported establishing an Equitable Transition Strategy. Many submitters acknowledged that communities with high socio-economic deprivation would be most impacted by climate change and climate mitigation policy. Some submitters wanted a more robust framework to manage an Equitable Transition Strategy.

> Government should urgently adopt a robust framework for equitable transition – this cannot wait until 2024. – Industry body

Many submitters wanted more support for an equitable transition for individuals and business. These submitters recommended the Government provide more financial and leadership resources to individuals and businesses transitioning to lower-emission practices. Some submitters emphasised systemic and industry-level change over focusing on reducing individual emissions.

Some submitters wanted more collaboration across public, private and community groups, including strong consultation with Māori and local government. Some submitters wanted co-benefits maximised within the equitable transition – especially health, housing and transport – or wanted a wellbeing approach to the climate crisis.

> The intersectional nature of the climate crisis means that addressing it necessarily means addressing other societal challenges, like poverty, systemic racism, the mental health crisis and xenophobia for example, while simultaneously creating more connected (and therefore resilient) communities. – Individual

Other themes included implementing revenue-neutral policy to redirect funds from the NZ ETS to support low-income families with the transition, identifying early the consequences for those in sunset industries and putting in place measures to mitigate these consequences, and more youth representation in decision-making.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 322 submissions (including at least 96 organisations) from emails and Citizen Space.

Equitable Transition Strategy objectives and measures

Support for specific proposals

84 per cent of 177 Citizen Space submitters agreed with the Commission's objectives for an Equitable Transitions Strategy. (Question 13)

Overall, most submitters agreed with the objectives for an Equitable Transitions Strategy set out by the Commission. Of those who disagreed, many said the objectives did not go far enough.

Many submitters suggested change or additional objectives, including: more partnership with iwi/Māori, closer collaboration with the private sector, regular review cycles for equity indicators and a greater emphasis on ensuring income and structural inequities are addressed.

> 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. – Local government

Some submitters wanted measures that specifically addressed intersectional inequity. These submitters highlighted the compounding impacts on people who identify with more than one of the prohibited grounds for discrimination in the Human Rights Act 1993.[3] Other recommendations included:

- regularly reviewing equity indicators and objectives
- the most consideration being given to the rural community
- waiting until alternative technologies were available before phasing out existing technologies (eg, waiting for low-emissions alternatives to existing utes).

Some submitters proposed additional measures to those put forward in the discussion document. These included co-design or collaborating more with Māori and local iwi when designing and implementing the Equitable Transition Strategy measures and collaborating more closely with local councils. Submitters emphasised the value of including local council at the strategic level as well as at the implementation stage. Some other themes included gender equity (eg, a greater role for women in strategic climate planning) and bipartisan political agreement for climate-related measures.

A few submitters noted that it was often the most affected groups that had the most limited resources, and that this should be considered when developing the current and future Equitable Transition Strategies.

Support for specific groups

Many submitters said low-income households might not be able to afford the necessary housing upgrades to make their homes healthier and more energy efficient. These submitters supported direct contributions or subsidies from the Government to upgrade low-income housing to make it more energy efficient. Some submitters noted co-benefits of improved health outcomes from higher quality housing. Some submitters wanted a building warrant of fitness.

> Prioritise real measures that reduce vulnerability now, so that low emissions living is easy and affordable for everyone. That includes affordable housing, adequate incomes, decent jobs, healthcare, education and enabling environments. – Individual

Many submitters highlighted transport as a mechanism to lower emissions for low-income households. They suggested making public transport free for those in low-income households. Some submitters supported Government funding for alternative transport initiatives, such as low-emissions car-leasing or ride-sharing programmes.

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[3] See, section 21 of the Human Rights Act 1993.

Some submitters wanted more support for low-income households to manage their waste production and disposal more efficiently. Some submitters noted that low-income households required greater education and financial support to reduce waste, such as composting. Submitters recommended this responsibility be shared by both local and central governments.

While supporting measures to assist low-income households, some submitters said greater responsibility to reduce household emissions lay with higher income households. These submitters said higher income households generated more emissions and should, therefore, also be the focus of behaviour-change campaigns to reduce household emissions.

Some submitters sought more financial security for households. Suggestions included a higher minimum wage or a universal basic income so that low-income households could afford lower-emitting products and interventions, and a revenue recycling scheme from higher NZ ETS carbon prices to fund decarbonisation projects – including those for low-income households. A few other submitters suggested providing a universal income for New Zealanders and early retirement options for those over a certain age made redundant from sunset/sinking lid industries.

Most submitters wanted more educational and training support for workers at risk of job displacement. Many submitters supported free or subsidised training or higher education for career changes caused by climate displacement. Some submitters also recommended a climate curriculum for school-aged students. These submitters supported directing students away from sunset or sinking-lid industries impacted by climate change.

Most submitters wanted more community-led solutions. They said communities, iwi and local interest groups needed to be empowered through greater agency, funding and information. Examples included:

- local risk-assessment tools and data to allow communities to better manage their own risks
- funding for programmes supporting community capability and capacity for transition planning, and local solutions (eg, community solar projects)
- Citizens' assemblies and participatory budgeting.

Like the responses on private sector action to reduce emissions in section 5, 'Transition strategy and pathway to 2050', suggestions for support for businesses included clear signalling about the direction of change (eg, the price of carbon, the price of electricity, government procurement rules and potential subsidies).

> The government needs to use its levers to set out what the 2050 net-zero Aotearoa looks like, and in detail. What materials will we use in construction, what will we build our roads from, and start making clear what the future looks like. Then businesses will be able to invest in the supporting infrastructure to transition to low emission models in their business, not just electric vehicles and plant. – Business

Another common theme was incentivising business change, including: subsidising early adopters of low-carbon approaches, mandatory emissions reporting, tax incentives for reducing emissions, and government procurement rules (prioritising low-carbon businesses).

Government accountability and coordination

Key themes and messages

Many submitters commenting on government accountability sought greater collaboration with local government, Māori and the private sector. In relation to iwi/Māori, this was both to uphold Te Tiriti obligations and to use knowledge held by local iwi in relation to the environment.

Submitters wanted to see government held to account through stronger reporting and monitoring measures, including an independent monitoring body.

Many submitters recommended stronger partnerships be established with local government and community groups, to allow local government to share knowledge with central government and to increase the accountability of local government.

> In the plan, reference to government accountability and coordination seems to focus [on] central government, yet local government also needs to be held accountable. Local governments, for example, mostly own or lease out landfills and enter into major contracts with waste management companies. – Community/NGO

Many submitters commented on the need for greater clarity on roles, responsibilities and accountabilities within climate-change actions. This was cited as a necessary support mechanism for cross-agency and cross-sectoral collaboration. Some submitters recommended that New Zealand Government Procurement (within the Ministry of Business, Innovation and Employment (MBIE)) play a leading role in the climate response. Some submitters supported the Commission's recommendation to introduce Vote Climate Change.

Another major theme was the need for greater transparency of data, including emissions inventories. Many submitters requested that climate data be published more frequently, with the ability to analyse data on a geographic or sectoral basis:

> I think that a much richer database of GHG emissions (eg, by region, but also by sector) will be needed to ensure that we are staying on track to meet NDCs. – Individual

Some submitters also said that government accountability on climate action would be supported through more consistent, frequent and widespread education and communication strategies (such as those used throughout the COVID-19 campaign).

A few submitters also emphasised the need to align climate action with other reform processes under way including Three Waters, Future for Local Government, and Resource Management reforms. A few submitters also requested development of publicly accessible climate-action tools, such as a life cycle assessment calculator.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 255 submissions (including at least 85 organisations) from emails and Citizen Space.

Measures for government accountability

The main themes for this question were greater transparency, frequency and accessibility of reporting; greater collaboration with local government; and setting clear benchmarks for future governments.

The two-to-three-year lag for data and the annual reporting timeline was cited as problematic. Quarterly reporting of data made available within six months was suggested as a target for improved government accountability. Similarly, some submitters suggested that reporting emissions data by region or with an urban/rural lens could also improve accountability. Some submitters suggested greater collaboration with, and support to, local government and the private sector could improve accountability and share responsibility:

> 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. – Local government

Some submitters also noted the importance of holding future governments to account (while acknowledging this is, to some degree, already in the hands of the present government). Some submitters suggested the Government use clear legislative benchmarks or establish an independent and dedicated body to consistently monitor current and future government accountability.

Some submitters noted the importance of meaningful collaboration with Māori as a necessary component of climate-change action and as a method of government accountability. Some submitters said that stronger partnerships with Māori would, by their nature, keep current and future governments more accountable.

New ways of working together

The key themes for this section included support for a mission-oriented approach, which the discussion document defined as joining "efforts, resources and knowledge across disciplines, sectors and policies, to collectively support projects that tackle climate change" (see also Section 13, 'Research, Science and Innovation'). Caveats to this approach included the need for more meaningful collaboration and a clearer problem definition.

Many submitters supported a mission-oriented approach to working together but had additional suggestions or caveats. These included ensuring collaboration to remove siloed approaches to working together, working across public and private sectors, and recognising the time required to innovate and implement new approaches – especially when technology is involved.

Many submitters raised the need to strengthen collaborative relationships with Māori, other government agencies and the private sector. Some submitters specifically recommended more targeted or nuanced consultation with stakeholders as opposed to more traditional forms of public consultation on technical climate concerns.

Some submitters recommended greater investment in defining problems. Some suggested this could be achieved though collective goal setting for more fair and inclusive outcomes. Some submitters suggested clearer problem definition could better inform research for more targeted and productive research outputs.

Behaviour change

Key themes and messages

Overall, there was strong support for behaviour change initiatives as part of the emissions reduction plan, especially related to educational resources. There was tension, however, between the need for individual versus structural behaviour change.

Some submitters supported individual behaviour change though measures including education, media campaigns and tools to enable consumer choice, such as labelling standards. These submitters said responsibility for climate action was a shared responsibility. Other submitters criticised the notion that behaviour change was the responsibility of the individual and supported a structural-change model, including through legislation and standards. Some of these submitters thought that behaviour change should be primarily actioned at the systemic and structural level:

> Behaviour change work is a public good. It needs to be invested in so that we can bring everyone along on the journey. It is a major transition for most people to shift to a low carbon lifestyle. It is a long-term, relationship-based process. – Individual

Some submitters recommended establishing or nominating a government agency to manage behaviour-change initiatives within a top-down framework. Other themes from this section included the need for:

- investment in targeted campaigns to reach the New Zealanders disengaged with climate action
- behaviour-change initiatives to target comorbidities such as healthcare concerns and long commute times (eg, active transport, working from home).

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 267 submissions (including at least 80 organisations) from emails and Citizen Space.

Information, tools or forums

Submitters were most interested in strengthening education and awareness campaigns, more accessible tools to enable consumer choice and reassessing consultation forums.

Many submitters recommended increasing educational opportunities and resources, including building climate action awareness into school curricula. Some submitters recommended funding community groups and NGOs to better educate their communities and raise awareness of climate goals and challenges. Some submitters noted that local groups would be better placed than centralised education campaigns to tailor content and resources to the needs of their communities. Conversely, some submitters recommended a large-scale, national climate-education response, similar to the COVID-19 response. A few submitters also noted the importance of mitigating misinformation online and on social media specifically.

Some submitters recommended streamlining climate-action tools to make them more accessible, universally applicable, and comprehensive. A few submitters said tools should be designed to facilitate good decision-making, such as: a climate-action toolkit for companies, circular economy directory or emission-calculation tools. Some submitters recommended establishing alternative

consultation forums such as a citizens' assembly using deliberative democracy or community advisors:

> New Zealand should develop its own citizens' assembly-style of engagement that is consistent with Te Tiriti o Waitangi, which seeks broad consensus in high level goal setting rather than attempting to seek community consensus on changes. – Community/NGO

Trusted information sources

Many submitters highlighted the importance of receiving information from trusted advisors, including through official and unofficial channels. Many submitters acknowledged that trusted knowledge and information sources varied between communities and individuals and should be catered for accordingly. Many submitters recommended messaging and information originating from verified and evidence-based sources.

Many submitters wanted to receive information through trusted advisors. Who qualified as a trusted advisor varied significantly between submitters, with some submitters noting the importance of recognising this diversity.

> 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

Many submitters referred to trusted advisors who fit within official or unofficial channels. Official channels included policy makers, mainstream media outlets, schools, and government agencies. Unofficial channels included peers, community groups, and social media channels.

Many submitters also discussed the types of messaging they thought would be most effective. Many submitters said that verified, evidence-based and scientific information would be the most trustworthy. Some submitters recommended using Te Tiriti frameworks for communicating. Some submitters emphasised the need for messaging to communicate the direct, tangible and immediate nature of climate change for it to be most effective.

Aligning system settings and using cross-sector tools

Funding and financing

Key themes and messages

Most submitters emphasised the need for appropriate levels of funding, and funding that was well managed. Some submitters wanted all government funding to align with the overall strategy to transition to a low-emissions future efficiently and effectively. This included defunding or de-incentivising high-emissions activities. Recognising the need for significant investment, some submitters wanted the Public Finance Act reformed to remove limits on borrowing and investment to enable more government spending to implement the emissions reduction plan. Some other submitters wanted greater funding for local government, reflecting its role in reducing emissions, especially in transport.

> We request greater consideration of the significant role local government has in promoting and enabling climate action, and recognition of local government's limited funding tools. A significant increase in funding and support to local government from central government will be required to achieve these mutual goals. – Business

As mentioned in other sections, some also wanted strong partnerships between the private and public sectors to facilitate a successful transition and boost private investment. Some submitters supported mandatory climate-related financial disclosures as a tool for encouraging private sector action. Some submitters also emphasised government investment into low-emissions options to encourage private investment into new initiatives. They noted that the Government would need to take a central role in leading the change and supported greater funding and access to existing decarbonisation funds (such as those operated by the Energy Efficiency and Conservation Authority).

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 241 submissions (including at least 80 organisations) from emails and Citizen Space.

Main barriers affecting the flow of private capital into low-emissions investment

Like responses received in section 5, 'Transition strategy and pathway to 2050', most submitters said uncertainty was the main barrier to private investment in low-emissions activities. Many discussed the impact on investors due to a lack of clear policies, regulatory pathways, and direction from government. Another factor was a lack of coordination across private and public sectors to act on an agreed vision.

> I think that a huge issue is uncertainty around potential future changes in Government policy direction that could devalue investments made now. Policies potentially affecting the returns on low-emissions investments need to be predictable, definitive, not subject to political

> interference, and locked-in for several decades as the returns often take decades to come to fruition. – Individual

Some of these submitters noted that incentives and greater access to data and information would be needed to increase investment uptake in low-emissions areas. They said limited options combined with the risk of low returns disincentivised investment. Submitters wanted greater access to information and clearer signals from government.

Constraints for Māori accessing finance for climate-change response activities

Most submitters said Aotearoa lacked systems to support Māori and Māori collectives accessing finance, and existing systems lacked a kaupapa Māori approach. Some submitters said the Government needed to do more to address structural racism and align decision-making processes with Te Tiriti obligations.

> Many elements of our current financial system do not accommodate cultural and spiritual aspects important to Māori. – Business

Emissions pricing

Key themes and messages

The most pervasive theme was the need to reduce gross emissions. Many submitters considered that continuing to include forestry in the NZ ETS and other forms of offsetting would be detrimental to reducing the country's gross emissions. These submitters suggested the proposed measures in the discussion document would encourage increased forestry (especially of exotics) as opposed to reducing gross emissions. These submitters supported proposals to constrain forestry in the NZ ETS. Some others supported the continued use of offsets to buy time before low-emissions technologies were readily available.

Many submitters disagreed with the approach of providing industrial allocations to emissions-intensive, trade-exposed businesses and wanted industrial allocation phased out faster than the existing policy. A few industry submitters had the opposing view, that industrial allocations were still needed to protect manufacturing in Aotearoa. Many individuals also called for agriculture to be brought into the NZ ETS (many submitters appeared unaware of the He Waka Eke Noa process, further covered in section 18, 'Agriculture').

> Holding our highest polluters to account, real incentives to encourage these corporations to channel some of their huge profits into cleaning up their emissions is very important. – Individual

Some other common themes included:

- mixed views on pricing (some said it was too low and others that it was too high)
- the need to explore including other nature-based solutions in the NZ ETS (eg, wetlands, mangroves, kelp and seaweed)
- the need for policies complementary or additional to the NZ ETS
- a carbon tax as a more effective (and fairer) mechanism for reducing gross emissions
- the NZ ETS should contain a mechanism to benchmark the New Zealand Unit (NZU) price against that of trading competitors.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 264 submissions (including at least 85 organisations) from emails and Citizen Space.

Informing investment decisions

Support for specific proposals

55 per cent of 118 Citizen Space submitters did not have sufficient information on future emissions price paths to inform their investment decisions. (Question 28)

Most submitters said they lacked sufficient information on future emissions price pathways to inform investment decisions. While these submitters were confident that the price was going to increase, they said there was too much variability to inform investment decisions.

> It is clear that there is an upward trend but the range of prices is large and could mean little impact (low end) or large impact (high end). Does not promote decisive decision making, rather it encourages a sit and wait philosophy. – Business

Of those submitters who said they had sufficient information, a few said that their information was from the Commission's price forecast. Others said that knowing the price was going to increase was enough for their decision-making.

Many submitters across all responses criticised the NZ ETS. In their view, it did not reduce overall emissions. Individuals were particularly critical of past purchases of offshore credits and did not want this to be permitted in the future.

Some submitters commented on the emissions price they factored into investment decisions. The most common response was $70 per tonne, based on the Commission's projections. However, most respondents did not provide a specific value: they either used a value range or did not factor it into their investment decisions. A few submitters representing multinational companies said the relative emissions price between Aotearoa and other markets was more significant.

> We update our emissions price pathway forecasts at least once a year based on prevailing market factors, including the risk premium we attach to the probably [sic] of regulatory interventions and uncertainties. This is not one price point, rather it is the anticipated price over time, within a higher and lower bound. – Business

Forestry as an offset

Support for specific proposals

94 per cent of 143 Citizen Space submitters agreed the treatment of forestry in the NZ ETS should not result in a delay, or a reduction of effort, in reducing gross emissions in other sectors of the economy. (Question 30)

Almost all submitters agreed that the treatment of forestry in the NZ ETS should not delay or reduce gross emissions reductions in the economy. The main reason was that focusing on net emissions (offsetting by forestry) disincentivised or hindered reducing gross emissions.

> Yes, we strongly agree. It is essential that emitters should focus efforts on reducing emissions, especially in the easier to abate sectors, rather than continuing to rely on the availability of [New Zealand Units] from exotic mono-culture plantations. There is evidence that current ETS and related settings are resulting in new plantations which have negative environmental and social outcomes. There need to be safeguards within the ETS and/or other policy and regulatory frameworks which avoid these perverse outcomes and support nature-based solutions. We support the concept of 'new forests of the right type, in the right place and for the right purpose'. – Industry body

Those that disagreed said focusing on net emissions was appropriate and that carbon removals should not be de-emphasised. They said forestry was a way to 'buy time' for hard-to-abate industries to transition to low-carbon business practices.

> [We] disagree that reductions in gross emissions should be prioritised over reductions in net emissions and consider that removals and reductions of emissions should be treated equally. There appears no valid basis for moving away from the legislative net target for long-lived GHG emissions and to a focus on gross targets. – Business

Constraining forestry in the NZ ETS

While few submitters specifically addressed the discussion document's proposed options for constraining forestry within the NZ ETS, many submitters supported the general concept of limiting exotic afforestation and limiting the ability to offset emissions. The proposed options with the most support were: reducing the rate at which units could be earned by exotic forest and limiting the overall area of forest that can be registered in the NZ ETS each year, or otherwise amending the eligibility criteria.

Some submitters opposed all the proposed options in the discussion document on the basis that forestry should be excluded from the NZ ETS so as not to detract from reducing gross emissions. Others provided the opposite argument that forestry should not be constrained at all as carbon sequestration was necessary for meeting net-zero targets.

> The idea of needing to constrain forestry at all is completely illogical. This is a climate crisis. ... How can we be seriously consulting on trying to limit the amount of carbon sequestration by forests? New Zealand has declared a climate emergency and its updated NDC indicates a need to import 102 Mt international credits. – Business

A few submitters said the discussion document options were causing uncertainty by incentivising afforestation through a higher carbon price while also proposing to put a cap on afforestation. Many submitters opposed 'tinkering' with the NZ ETS in such a way.

> Forestry is a long-term investment and forestry investors will want policy predictability over the lifetime of their asset. In recent years forestry investors have been given a strong signal via Government policy that afforestation was desired, including through changes to the NZ ETS to incentivise the participation of foresters in the scheme. The indication that Government is now considering disincentivising forestry introduces material uncertainty for forestry investors and landowners and undermines New Zealand's ability to meet its net-zero target. – Business

Some submitters suggested areas the Government should consider when assessing options to constrain forestry. Many individuals suggested biodiversity outcomes should be considered and some individuals suggested converting beef and dairy to forestry. Others suggested the opposite: that afforestation would be at the expense of agriculture. Another common theme from individuals was the need to consider the impacts of the options on gross emissions reductions.

Some common suggestions from organisations were to consider the effect of policy uncertainty on investment decisions, especially for those considering converting from agriculture to forestry. Others suggested considering the impact on other aspects of the economy and related industries (eg, the biofuel industry). An evidence-based approach was another common theme.

> We suggest that there needs to be consistency in progress and a balance of incentives in forestry and other sectors or activities (e.g., the export of synthetic greenhouse gases and the production of products that embed carbon) to maintain investor and landowner and/or company confidence. – Industry body

Many individuals raised unintended consequences that the Government needed to consider. These included the environmental impacts of monocultural pine plantations such as erosion, biodiversity loss and fire risk. Another common view was that foreign ownership of plantation forestry negatively affected Aotearoa businesses, including construction firms and Māori-owned forestry. A few submitters commented that the owners of these plantation forests were more likely to export raw logs without considering domestic processing or use. A few organisations suggested the impacts on rural communities should be considered.

> 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. – Business

Planning

Key themes and messages

Responses to this section have been provided in the context of ongoing reform of the Resource Management Act, which will provide an opportunity to integrate emissions reduction into land-use planning and investments. Most submitters supported urban intensification as a key planning initiative. Many submitters emphasised that climate action and emissions reduction should be at the heart of all planning decisions and systems. Submitters highlighted as key tenets of this initiative: accessible active and public transport, high-density and affordable housing, low-sprawl cities and more green spaces, and adequate supporting infrastructure. Most submitters said an effective planning system would require cross-sectoral work, especially between urban development and transport.

Some other submitters opposed urban intensification. Some said that model was not compatible with many smaller, rural and isolated communities in Aotearoa. Some submitters noted that planning initiatives should not come at the expense of natural and green spaces; protecting and restoring such spaces should be integrated into planning systems.

Some submitters called for urgency and emphasised that planning systems should assist climate action, rather than act as a barrier. Some submitters indicated that planning systems should

incorporate adaptation as well as mitigation. These submitters commented that construction in high natural-hazard risk and coastal areas should be avoided in urban intensification efforts.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 264 submissions (including at least 86 organisations) from emails and Citizen Space.

Ensuring the planning systems reduce emissions

Most submitters emphasised prioritising communication and connection across levels of government, sectors and regions. These submitters said that greater collaboration would assist effective decision-making and combat inconsistent or competing policies, consistent with views expressed in section 8, 'Government accountability and coordination'.

> Each department must connect with another. There needs to be clear channels of communication between government departments and implementation at local government levels. There needs to be regular communications fed back up the chain, from the people to councils to government departments. – Community/NGO

Many submitters supported improving data and analytics to inform and create effective planning systems. Some submitters wanted central government to empower local government to make, fund and fast-track decisions to reduce emissions. A few submitters also supported the emphasis in the discussion document on encouraging partnerships with Māori and iwi in relation to the planning system and creating more affordable, low-emissions housing and papakāinga developments.

Some submitters commented on the current reforms to the RMA, which were not the subject of specific questions in the discussion document. These submitters considered the existing planning legislation was sufficient, and reforms would delay much-needed action. Other submitters also disagreed with the proposed amendments, stating the changes had the same shortcomings as the current regime and would see the planning system continue to be ineffective and expensive.

How to promote urban intensification?

Many submitters supported a change in the approach taken to urban planning in Aotearoa – away from 'urban sprawl' and towards urban intensification. They said existing policies, building codes, zoning, and consenting processes needed to change towards prioritising sustainable initiatives. Suggested initiatives included building 'up, not out', increased public and active transport infrastructure, and reducing single-use vehicles. Expanding green spaces and incorporating nature-based solutions in urban planning was also raised by many submitters, who discussed the communal wellbeing benefits as well as the cooling effect created by planting more trees in heavily built-up neighbourhoods.

Many submitters suggested increasing funding and incentives for urban intensification. Suggestions included making it easier for construction companies to build medium- and high-density dwellings (eg, through local government-funded incentives) and reducing the risk of constructing new supporting infrastructure needed for these dwellings (eg, upgrading water pipes). Some submitters recommended '15-minute cities' where daily necessities can be accessed by walking or cycling from

residents' homes. Some submitters wanted an education campaign surrounding the health, social and economic benefits of this form of living.

> All peoples' needs, from school, supermarkets, healthcare, and workplaces, are accessible within a short distance (ideally 15 to 20 minutes from their doorstep), without using cars. Instead, public transport and well separated cycleways are the preferred mode of transport. – Business

Some submitters were opposed to urban intensification as they did not think that it reduced emissions. They said it would place further strain on infrastructure and perpetuate housing inequity. An alternative proposal was intensifying housing, public transport and infrastructure in smaller towns and rural areas, including local commercial and employment opportunities within walkable distances of housing.

Research, science and innovation

Key themes and messages

Many submitters said the country's research, science and innovation ecosystem should target system-level innovation over material- and product-specific innovation. Examples included focusing on the overall transport system and urban planning design, rather than EVs; or promoting refill and reuse initiatives rather than developing compostable packaging. Some also recommended a focus on existing technologies that were proven to reduce emissions, rather than relying on investing in new technologies – some saw this as delaying action available now. Several industry groups indicated support for a technology roadmap to provide the framework and rationale for investment in emerging technology.

Many other submitters sought greater investment in research, science and innovation (RSI). They proposed more funding for targeted research and suggested science should have a key role in providing solutions. They proposed a review of funding options to broaden eligibility for more businesses and researchers. These submitters discussed the need to enable innovation and to help sectors embrace new technologies. They also emphasised the need to improve funding and subsidise innovation for industries to use specific opportunities in Aotearoa (eg, geothermal and wind). They noted that a clear research agenda would strengthen the funding process between government and industry.

Some submitters called for more regulatory flexibility and industry incentives to encourage innovation. They said that due to their society-wide reach, regulated industries such as energy, financial services, and telecommunications presented opportunities for scaling sustainable, climate-friendly solutions. They recommended identifying specific actions policy makers could take to review regulatory settings to promote innovation and emerging technologies that support industry-wide transformations.

Some submitters proposed a significant opportunity for the Government to support climate-focused small businesses. They recommended that the Government act to remove regulatory barriers to businesses, align targeted funding and opportunities, certify that goods and services are low emission, and ensure all businesses have the capacity to measure and reduce their climate activities. These submitters wanted research to de-risk untested and emerging technologies and support technology uptake by industries.

Some submitters noted that funding structures available for innovation were creating barriers to local authority and business investment. They stated that innovation was an operational expense,

which is significantly constrained in comparison to investment in infrastructure. Submitters recommended the Government provide funding for local government to invest in emissions reduction innovations.

Many submitters also raised the importance of RSI for other sections of the emissions reduction plan. A lack of data and knowledge for decision-making was raised as a barrier to emissions reductions, particularly from councils and industry groups. Regulatory barriers within specific sectors were raised as a hurdle to the private sector innovating and adopting new technology or approaches, including for agriculture, energy and industry, and the building and construction sectors. Some submitters also wanted Government commitment to developing mātauranga Māori, including research and development, to support emissions reductions.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 186 submissions (including at least 73 organisations) from emails and Citizen Space.

Where would a mission-based approach help?

The discussion document sought views on where a mission-based approach would be appropriate. This approach is described as joining efforts, resources and knowledge across disciplines, sectors and policies to collectively support projects that tackle climate change. Submitters suggested the circular economy, agriculture and research and development (R&D) of new technologies.

Proponents for a circular economy often did so on the condition the mission-based approach focused on real and practical solutions that would have a direct benefit to our lower emissions circular transition. Many submitters commented that technology could help reduce agricultural emissions. Some submitters expressed that a mission-based approach was a good starting point, but more research and design funding were needed. Some submitters also proposed a mission-based approach to implement new low-emission technology and investigate the use of existing commercially available technology.

> Research and innovation, by its nature, is very hit and miss. It is critical, therefore, that R&D investments of public resources are directed where they might be expected, with confidence, to deliver strong, positive returns. – Industry body

Many submitters were opposed to a mission-based approach. They said that misplaced incentives prioritised piecemeal projects at the expense of long-term coordinated efforts. This resulted in short-term and disconnected projects.

How could RSI support hard-to-abate industries?

Many submissions commented generally on the importance of RSI: it played an important role in supporting sectors to reduce emissions. Research was important for modelling ideas and initiatives to determine whether they would have a significant impact. Due to the short timeframe for climate-change action, research and development allowed for investment in methods that could make a significant difference. Research could reduce barriers, mobilise emerging technologies and expand market opportunities. This helped to prioritise a transition to a circular economy and to cease funding for technologies or sectors which reinforce waste.

> Research and science can help advance the sectors, such as agriculture, energy, waste, and infrastructure, while offering integrated holistic solutions to emissions reduction. Science and research can boost the development and use of new low-emission technology, the finetuning of production systems, and implementation of governance strategies. – Industry body

There were few submissions on specific hard-to-abate industries. The transport sector required further research and innovation on alternate fuels and transport technologies for heavy freight.

Many submitters discussed the opportunity for emissions reductions in switching from concrete to cement. Carbon emissions from concrete use in Aotearoa could be significantly reduced by transitioning to low-carbon concrete or cement alternatives.

Opportunities for unique global advantage

Many submitters commented on the country's unique opportunities for global advancement. Some submitters identified geothermal energy – specifically when partnered with carbon capture and storage technology – as an opportunity for the country. Through minimising gas emissions from plant processes and reinjecting these gases underground, they said the energy generation could be carbon negative.

Some submitters commented on the country's large Exclusive Economic Zone. They suggested funding for marine energy devices could offer Aotearoa a unique advantage to be leaders in this area. This could also provide an opportunity for Aotearoa to use the ocean as a greenhouse gas (GHG) sink.

Some submitters suggested Aotearoa had a significant opportunity to capitalise on bio-based chemicals and materials. Moving away from fossil fuels provided an opportunity for the country to develop bio-based feedstocks in place of petrochemicals for export. They argued the creation of specific biomaterials for horticulture would also benefit the local economy and environment. Some submitters commented on the country's opportunity to position itself as a supplier of green hydrogen. This could lure in high-tech business and industries to Aotearoa with abundant and cheap zero-emission electricity.

Some submitters supported the opportunity for Aotearoa to make low- or zero-carbon steel. They stated that Aotearoa had a skilled workforce that could produce steel and iron. In the transition to a low-emission, circular economy, low-carbon steel will become sought after globally. This would create an opportunity for the country's exports.

Some submitters commented on the country's abundant hydro and wind renewable energy capacity. Hydropower and wind could be used to electrify rail and road freight, providing the opportunity to offset other non-negotiable GHG costs. Conversely, some submitters were not supportive of the country's unique opportunities. They suggested these opportunities will be dependent on political and societal pressures placed on emissions reduction.

How could Aotearoa grow frontier firms?

Many submitters agreed the Government played a large role in frontier firms' involvement. They said the Government needed to provide stable policy settings in energy, trade, investment and immigration policy. This would provide business confidence that the social and economic cost of the policies will not result in a change in legislation or tax liability. These submitters argued the focus on frontier firms should be broadened. Frontier businesses were supported by supply chains, and the

bulk of business needed to move to a sustainable future, not just those at the vanguard of value chains.

Many submitters supported collaborating with Māori businesses. Māori business needed to be supported to realise its potential in the green economy. They argued Māori were more knowledgeable about the circular economy and could lead the way for others. They said significant funding was needed to support knowledge transfer.

Some submitters argued that the pathway to success needs to be shown to frontier firms. Frontier firms needed support to create genuine collaboration between start-ups and established industry. They argued local government, economic development agencies and regional councils needed to be encouraged to support frontier firms that were trialling new technology and products.

Submitters were also asked what additional requirements were needed to ensure the growth of Māori frontier firms, and to support and learn from mātauranga Māori. Some submitters said there was a lack of mātauranga Māori expertise and capability in the built environment. They recommended MfE enable the development of a mātauranga Māori advisory group. The Māori advisory group would provide feedback to the sector and support climate-change and emissions-reduction initiatives. The submitters said this would be an opportunity to challenge existing paradigms and create opportunities that have a greater chance of changing current industry practices while incorporating greater environmental kaitiakitanga.

> It is essential that our sector has actions and policies that incorporate mātauranga Māori and that they are undertaken in a way that is appropriate to kaupapa and tikanga Māori. – Business

Opportunities for innovation to generate greatest reduction

Some submitters argued reducing energy demand would generate great emission reduction. They suggested investing in identifying and eliminating unnecessary energy consumption and waste. This was linked to behaviour change.

For waste, submitters said research should (re)focus on upstream elimination of waste, rather than downstream waste disposal or reuse. They suggested the Government needed to develop a robust and transparent scorecard regarding research funding and focus on technologies that already existed. Product and business model redesign was required for the waste sector to achieve outcomes such as waste prevention, reduction at the source and product reuse. Many submitters suggested preventing solid waste from being created would lead to a significant emission reduction.

Some submitters noted the statistic in the discussion document that the country's solid waste contained 81 per cent organic content. Given this estimate, they argued that diverting this waste from landfill presented a large opportunity in emissions reduction. There was an opportunity to eliminate methane emissions associated with organic waste from landfill and, to a lesser extent, reduce emissions from transporting that waste.

Some industry submissions opposed the focus on diverting waste from landfill and said landfills would remain part of the solution to waste for many years to come. They noted that solid waste was a small portion of overall emissions and had achieved significant progress already.

> 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. – Industry body

Circular (and bio) economy

Key themes and messages

Most submitters supported transitioning Aotearoa to a more circular economy. Some urged swift action to enable this shift. Many focused on the need for system-wide collaboration, including central government agencies, local government and other stakeholders. This was needed to break down silos and ensure a more robust process for achieving a circular economy. Some wanted a new agency formed, with responsibility for supporting a more circular economy.

Many submitters focused on reducing waste as a key element to a circular economy. This included reducing or preventing organic waste going to landfills. Some of these submitters said more infrastructure would be required to address this. Within the context of the zero-waste goal for Aotearoa, many submitters supported product stewardship; particularly the right to repair products, to reduce waste and promote the waste hierarchy. Submitters also wanted transparency around products, to inform consumers on whether products are repairable, reusable, recyclable and durable.

> An investigation should be conducted into the viability of establishing a national network of repair and upgrade centres for appliances to make it cheaper, quicker and more convenient to repair items than replace them. – Industry body

Some submitters commented on the need for collaboration across central and local government. They noted that this would enable a systems approach to a circular economy and ensure alignment across all sectors. Similarly, a few of these submitters noted the need for an agency to be developed, to progress work towards a circular economy.

Overall, most submitters supported including the bioeconomy within the circular economy. Conversely, some suggested the concepts were distinct and the Government should approach them separately. Many submitters focused on biofuels as a key opportunity within the bioeconomy. A few submitters proposed a national strategy on biofuels as part of the national energy strategy.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 299 submissions (including at least 80 organisations) from emails and Citizen Space.

Our circular economy in 2030, 2040, and 2050

Submitters outlined several elements required to establish a more circular economy in Aotearoa, with a view to a fully circular economy by 2050:

- implementing waste hierarchy principles, and increasing ‘reduce, reuse and recycle’ approaches
- new and improved resource recovery infrastructure for all waste streams, including organics, to ensure that all waste would be captured
- encouraging a ‘closed loop’ with products and packaging designed to be circular from the outset
- a more regulated product stewardship approach and requiring products to be repairable.

Some submitters said collaboration between government and stakeholders, and across all business sectors, would be essential. They said infrastructure and systemic change would be required. Some submitters also said government support for businesses would be crucial.

> With proper collaboration between government and the various stakeholders across the system, it is possible to go a long way towards achieving this vision. – Industry body

Some submitters said the circular economy needed to be supported with greater education. Businesses, stakeholders and consumers should be provided with educational resources to understand the impacts of waste, and how a circular economy operates.

Defining the bioeconomy, its place and agenda

There were diverse views on the bioeconomy. Many said Aotearoa was naturally placed to further develop a bioeconomy as there was a strong foundation of biologically based industries. Of these submitters, some noted opportunities which included: striving for global leadership, shifting from exotic to native forestry, cultivating seaweed and local food production, and creating resilience in communities. Some of these submitters noted that reducing food waste was a top priority of the bioeconomy. Only a few submitters commented on the definition of a bioeconomy and generally agreed with the discussion document's definition.

Some submitters opposed expanding or integrating the bioeconomy. They said further regulation was needed to avoid unintended consequences, including increased emissions. A few submitters also said that within a strategy to increase the bioeconomy in Aotearoa, the Government would need to consider and manage tensions between using land for agriculture and for large-scale production of biofuels. Some of these submitters maintained that the bioeconomy and circular economy were two different concepts. They said the bioeconomy presumes – rather than challenges – the existing linear economy. They emphasised that while biofuels and bioenergy were renewable, they were not circular, and not necessarily lower emitting.

> A bioeconomy needs to have clear guidelines and standards to ensure it isn't contributing more emissions than the source it is replacing. – Local government

Submitters raised many opportunities for the bioeconomy. These submitters noted a common opportunity was generating energy from waste produced by existing sectors. They commented that cooperation between the Government and industry would be key in developing the role of biofuels. These submitters discussed that energy from biomass could reduce dependency on fossil fuels, especially if supported by the true cost of fossils fuels being passed on to consumers. They noted this would make biofuels more competitive (this is discussed further in section 16, 'Energy and industry'). Other opportunities included: improving soil health, expanding native forestry, establishing infrastructure for wood processing, and increasing horticultural exports.

Most submitters agreed the bioeconomy should be included within a circular economy strategy. Some of these submitters supported integration, as a bioeconomy is a subset of a circular economy, and there are many parallel opportunities between the two in policy and legislation. Such opportunities included phasing out single-use products and product stewardship.

Some submitters partially agreed. These submitters wanted the scope of the bioeconomy to be clearly defined, and a holistic approach to ensure a focus on reduced consumption. They were concerned that a bioeconomy would not discourage consumption and waste and so could end up contributing to emissions.

> We should note that increased output from the bioeconomy may come from increased consumption of consumer goods, and the carbon use associated with that. – Business

Most submitters who expressed a view supported the proposals in the discussion document. A common caveat was that more ambition was needed, and a clearer pathway forward. Almost all submitters suggested work be progressed immediately. Most discussed the need for waste to be urgently addressed in all sectors of the economy. Some emphasised that organic waste should be diverted from landfill to more productive use. Others wanted an independent agency dedicated to the circular economy to implement the work programme, and clearly set out a roadmap for targets.

> There is a need for an agency dedicated to the circular economy, resource efficiency and conservation, to reduce silos, build a shared understanding, and enhance coordination. – Industry body

Barriers and regulatory priorities for circular approaches and the bioeconomy

Many submitters said the main barrier to a more circular economy was the existing linear economy. The linear approach was embedded in the way business operated, including international trade. Shifting from a linear extractive model to a circular regenerative model would require a major mindset change. Some submitters noted a cautious approach to regulated product stewardship, and responsibility was a further barrier.

> An outdated mind-set which favours a linear take-make-waste economy continues to predominate in business and politics, despite the multiple benefits of change. – Business

Some submitters noted a lack of existing infrastructure to address onshore resource recovery. Some others commented that transforming to a circular economy would need to be desirable and incentivised. This was required to address the dominant consumer culture and linear model that businesses are used to operating within. Some submitters suggested delivering funding through community leaders and groups to enable quick action and the development of small, local solutions.

Most submitters emphasised the need for regulations and investments to reduce waste. They stated that a product stewardship scheme or regulations would enable consumers to know whether products purchased were reusable, repairable, durable and recyclable. In addition to mentioning the six proposed products, other suggestions included textiles, construction and demolition materials and furniture.

Transitioning key sectors

Transport

Key themes and messages

Submitters discussed the transport system in general terms while also addressing the proposed 2035 transport targets directly. Submitters highlighted the high proportion of the country's total emissions that come from transport.

Most submitters urged the Government to be more ambitious in setting targets for the transport sector and to take greater action to prioritise mode shift away from high-emitting modes of transport (eg, private light vehicles) towards low-emitting modes of transport. Submitters discussed public transport and active transport in tandem and argued these were inseparable in creating the system change required to reduce the country's emissions. Submitters advocated for the Government take a holistic and equity-focused approach in reducing transport emissions.

Some submitters sought Māori-led or tikanga-based approaches to transport decarbonisation. These submitters called for those most affected by climate change and underserved by current transport systems to lead the response and system change. Submitters discussed inequitable access to transport, as well as the inequitable effects of transport within Aotearoa, such as pollution.

Many submitters stated the Government should aim to ensure active, public, or shared transport options were the most convenient options in towns and cities. These submitters sought large-scale Government investment in public and active transport infrastructure in conjunction with incentives for individuals, households and communities to shift away from private light vehicles. These submitters also suggested measures to disincentivise continued private light vehicle use. Many submitters supported free public transport as one such incentive.

> [We] support the campaign for Fares Free Public Transport as an initiative to promote equity, mode shift, and emissions reductions from transport. Early implementation of public transport initiatives, such as free fares, would provide a high-profile opportunity to kick start behaviour change, while maximising the emissions reducing potential of the existing public transport network. – Local government

Many submitters supported zero-emissions vehicles. Submitters encouraged the Government to further incentivise the uptake of EVs through rebate schemes, financial support to low-income households, charging stations and other EV infrastructure. Many of these submitters described EVs as 'low-hanging fruit' in the effort to reduce emissions or the most practical solution available. Some of these submitters considered EVs as the only viable option to reducing emissions.

Many submitters discussed the difficulties of reducing transport emissions for rural communities. These submitters described limited opportunities for rural communities to reduce light vehicle use and considered this unlikely to change soon.

Many submitters wanted additional targets, including: uptake of zero-emission heavy transport vehicles, treating aviation as a standalone focus in the emissions reduction plan, financial and other support for emerging technology such as biofuels.

Many submitters repeated here views consistent with those covered in section 12, 'Planning'. They said climate-focused urban planning was essential to reduce transport emissions. Submitters also highlighted inequitable access to low-emitting modes of transport, particularly public transport corridors.

A few submitters shared views consistent with section 10, 'Funding and Financing'. They highlighted the crucial role of local government in providing quality public transport and ensuring transport mode shift. They argued for increasing local government funding and funding methods.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 441 submissions (including at least 114 organisations) from emails and Citizen Space.

Target on vehicle kilometres travelled (VKT)

Support for specific proposals

73 per cent of 171 Citizen Space submitters supported 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. (Question 52)

Overall, most submitters supported introducing a target for vehicle kilometres travelled (VKT) reduction, although many wanted the proposed target to be more ambitious. They said the proposal was insufficient and lacked urgency or was inconsistent with the Government's expressed domestic and international commitments to address climate change. Many submitters argued for increasing the percentage reduction and shortening the timeframe, such as the 40 per cent VKT reduction by 2035 outlined in the Ministry of Transport Green Paper.

Most submitters said reductions should be focused on urban and high-population centres. Submitters supported a holistic approach to reductions over individual metrics for transport modes. Many submitters wanted the Government to prioritise active transport infrastructure, access to public transport, access to electric two-wheelers including with subsidies or rebate schemes, less car-centric urban planning, and banning imports of internal combustion engine (ICE) light vehicles. Many submitters supported an equity focus in achieving VKT reductions and highlighted socio-economic challenges such as shift work, inequitable access to public transport, and the up-front costs of electric vehicles.

Some submitters said the proposed target was too ambitious. They considered it was unachievable within a 15-year timeframe, lacking wider context, or needed a stronger data or modelling foundation. A few submitters argued VKT was not an appropriate measure as low-emissions vehicles would reduce emissions without necessarily reducing VKT. A few submitters wanted a per-capita target, which would not constrain growth in major centres and high population growth areas.

Target on zero-emissions vehicles in the light vehicle fleet

Support for specific proposals

71 per cent of 167 Citizen Space submitters supported the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions. (Question 53)

Most submitters supported the proposed target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035. Many said EVs were the most practical solution to reducing emissions. Many submitters caveated support on the proposed target being situated within a broader emphasis on mode shift.

> [We] support the decarbonisation of light vehicles, although note that more emphasis needs to be put onto mode shift. Increasing the number of electric vehicles (EVs) will not solve issues with congestion, parking, health and wellbeing caused by vehicles, and will not set an equitable direction to achieve a mode shift that also creates liveable cities. – Local government

Some submitters caveated support on the proposed target being accompanied by a reduction in the total size of the vehicle fleet. Another common caveat was that the target should be supported by more charging stations and EV infrastructure. Some submitters supported scrappage programmes and financial supports for low-income households to shift to zero-emission vehicles.

Many submitters were concerned about the upfront cost of electric vehicles or supply constraints linked to the size of the country's market. They wanted the Government to further incentivise zero-emission vehicle uptake.

Many submitters opposed the proposed target and associated actions. Some of these submitters said the target severely lacked ambition and advocated for a much higher target percentage by 2035 or earlier. Some submitters argued EVs were overemphasised in the emissions reduction plan and this distracted from transport mode shift. Some other submitters said the proposed target was overly ambitious or lacked detail on how it would be achieved. A few submitters said the proposal would exceed available electricity supply.

Target for freight transport

Support for specific proposals

78 per cent of 161 Citizen Space submitters supported the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions. (Question 54)

Most submitters supported the proposed target to reduce emissions from freight transport, and many wanted it to be more ambitious. They considered the target readily achievable and advocated for a whole-of-system change to freight transport in Aotearoa. There was significant support for achieving this target through shifting freight to rail (especially where electric), followed by coastal shipping. Submitters said shifting freight to these modes was achievable using existing technology and systems.

> [We] would support a higher target, through developing a stronger freight movement strategy across sea, air, rail and road logistics planning, through local freight network management, zero-emissions local distribution and zero-emissions freight vehicle development and adoption. – Industry body

Some other submitters said an increased focus on local solutions and living could contribute to achieving the target. They said current and historically cheap transport costs did not represent the true costs of emissions and wanted an overall decrease in consumption.

A few submitters opposed using mode shift to achieve the proposed target. They were sceptical of increasing the role of rail and coastal freight, considering it would require significant capital investment. They argued for a technology-neutral, mode-neutral target.

> Government interventions to advantage one transport mode over another inevitably create unnecessary additional costs and lower overall economic prosperity, because it removes the choice to use the most cost-efficient freight solution. – Industry body

Target for emissions intensity of transport fuel

Support for specific proposals

75 per cent of 155 Citizen Space submitters supported the target to reduce emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions. (Question 55)

Most submitters supported the proposed target to reduce the emissions intensity of transport fuel by 15 per cent by 2035. They also supported transitional measures such as biofuels and synthetic diesel, particularly aimed at decarbonising the existing fleet. Some submitters wanted a more ambitious target while others said it distracted from addressing systemic change in the transport system. Some submitters were concerned that biofuels or synthetic fuels could perpetuate reliance on private light vehicles, trucks and roads.

> [We] support the introduction of a sustainable biofuels mandate. However, we see the role of biofuels primarily to decarbonise our existing fleet, not to reduce emissions in new vehicles. The mandate should be applied at the fuel importation stage of the vehicle supply chain to ensure sustainable competition in the wholesale supply of ground fuels within New Zealand. – Business

Many submitters advocated for a more ambitious target and supported a clean car standard. A few submitters highlighted the country's old vehicle fleet. A few submitters said limiting fuel imports would be more effective in reducing emissions and others advocated for a sinking-lid policy approach to fuel imports.

A few submitters advocated for the Government to take a leading role in enabling biofuel development and production. These submitters considered Aotearoa was well placed to take advantage of emerging opportunities in alternative heavy transport fuels. A few submissions highlighted opportunities for sustainable aviation fuels and wanted the Government to introduce supportive policies to stimulate uptake and production.

Limiting light vehicles with ICEs entering the country by 2030

Support for specific proposals

83 per cent of 138 Citizen Space submitters supported the Commission's recommendation to set a time limit on light vehicles with internal combustion engines entering, being manufactured or assembled in Aotearoa as early as 2030. (Question 56)

Most submitters supported the Commission's recommendation to limit ICE light vehicles entering the Aotearoa fleet as early as 2030. They said this was necessary to avoid becoming a 'dumping ground' for ICE light vehicles from countries where similar bans have been implemented. Most submitters supported the Commission's timeline of 2030.

> We support the 2030 target. This will align Aotearoa New Zealand with other leading countries…Global light vehicle production systems are likely to enable such a target and we are well placed to maximise the lower emissions potential of electrification given our highly renewable grid. – Industry body

Many submitters discussed the need for clear messaging well in advance to enable households, councils, importers and businesses to make informed decisions. Submitters emphasised equity and noted the recommendation should be implemented alongside other programmes, including investment in public transport infrastructure and support for low-income households. Some submitters wanted the Government to bring the Commission's 2030 timeline forward to 2025 or earlier.

Some submitters opposed the Commission's recommendation. Most of these submitters advocated for shifting the timeline further into the future. They described a current lack of zero-emission light vehicles suitable for rural communities and considered this unlikely to change before 2030.

> Any target that sets a time limit on the availability of internal combustion engines should either exclude internal combustion engines in rural areas or set a separate and longer time limit for rural areas. – Industry body

Many of these submitters said that synthetic fuels made a ban on ICE light vehicles premature.

Energy and industry

Key themes and messages

The main themes in the energy and industry section were ending the country's reliance on fossil fuels, including: ending oil and coal extraction, developing community energy generation, encouraging the uptake of solar power and other renewables, reforming the electricity wholesale market, and using alternative technologies such as carbon capture and storage.

Most submitters overwhelmingly supported eliminating the country's dependence on fossil fuels, starting with phasing out its use in all public buildings and housing, schools, hospitals and marae. Some of these submitters wanted the Government to divest all public investment funds, such as the ACC Fund and the Super Fund, from the fossil fuel industry, and minimise importing goods and services based on fossil fuels. Many submitters also wanted a ban on all new or expanded coal mines,

as well as all on and offshore oil and gas exploration. Some of these submitters suggested a simple change to the Crown Minerals Act 1991 as the best mechanism to give effect to these bans.

Many submitters wanted expanded community generation systems to improve network resilience in the face of natural disasters, creating employment opportunities and increasing energy sovereignty. These submitters said Government support for distributed generation and community-scale transmission networks would reduce grid infrastructure maintenance costs. Some submitters argued standalone networks with generation capacity would not only improve community resilience but also lower emissions.

> Encouraging this shift through incentives to minimise the transmission distance from generation to end user would, over time, also reduce emissions in the form of losses across the grid. – Individual

Many submitters wanted Government support for greater uptake of solar power for households and businesses. These submitters suggested that a suite of subsidies, incentives, and low-interest loans would help to increase solar panel and battery installations. Some submitters spoke about the need to enable marae and other communities to build solar panels and share the power generated. While focusing on security of supply, some submitters wanted greater use of geothermal energy as baseload generation to minimise the impact of more variable renewable energy generation. These submitters said another benefit of geothermal energy was local employment.

Some submitters spoke about the need to change the mechanism for setting prices in the electricity wholesale market so that participants no longer had a financial incentive to produce and retain thermal generation. A few submitters wanted the Government to take over the Tiwai smelter (presuming Rio Tinto exits Aotearoa) and run it at half capacity to use the remaining electricity to help decarbonise essential services in the South Island or support new industries such as data centres run on renewable energy. A few submitters sought greater use of carbon capture and storage technology or nuclear energy.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 313 submissions (including at least 102 organisations) from emails and Citizen Space.

Developing an energy strategy

Overall, submitters almost exclusively supported developing an energy strategy that would enable a just and ambitious transition to decarbonise the energy system. Most submitters emphasised the need for security of supply and a reduced or near complete phase-out of fossil fuel-generated energy. Many submitters identified electricity affordability as a key priority to ensure vulnerable New Zealanders were not left behind. Some submitters emphasised the costs that would be imposed on consumers to convert to appliances with non-fossil fuel sources, and discussed ways of minimising costs, such as by adopting dual fuel appliances. Many submitters also recommended the energy strategy focus on reducing – or not growing – demand through many energy efficiency policies and regulations.

> With lower demand and higher efficiency, our present renewable energy supply may more nearly meet our needs, perhaps obviating the perceived need to build dollar- and carbon- expensive projects to increase supply. – Industry body

Some submitters noted the energy strategy needed a system-wide, holistic approach with a long-term view of change, including engaging industry as equal partners. These submitters said industry engagement was important to develop a cost-effective pathway for the wellbeing of families and businesses. A few submitters promoted locally based or distributed energy generation from renewable sources to reduce national energy demand and keep the cost of the transition down.

Many industry submitters recognised that investment in low-emissions technology was the biggest challenge the country faced in transitioning the energy system. These submitters said that even though the Government has emphasised the importance of research and innovation, there was a disconnect between existing incentives and investments being implemented in this area. Submitters identified the lack of storage potential for renewable energy as another major challenge, with investment needed in such technologies.

Many submitters saw natural gas having a role as a transition fuel in the energy strategy while alternative energy supply chains were being established. These submitters said gas distribution networks were important for converting to supply biogas or green hydrogen. They said a ban on natural gas would result in deteriorating infrastructure. A few submitters identified geothermal energy as instrumental to fill the gap in energy generation when the country's fossil fuel-based plants closed.

Setting a pathway for transition

Many submitters wanted the Government to provide a specific date for fossil fuels to be phased out and said more clarity on the support available (if any) to assist energy-intensive industries to transition.

A few industry submitters explained that the necessary investment in renewable electricity generation required confidence in future demand and that government policy regarding emissions-intensive trade-exposed industries would have a significant impact on future electricity demand.

Many submitters said this would give New Zealanders and businesses the assurance that risks could be appropriately managed and mitigated in an increasingly renewable system. To enable producers and consumers to make well-supported investment decisions, submitters recommended the Government clarify its approach to decarbonising each energy system (eg, electricity and gas). They supported regulatory frameworks that incentivised varied, affordable and additional renewable power (eg, local solar, distributed energy resources) along with new purchasing options for both the wholesale and retail market.

Both individual and industry submitters said transparent communication was essential to enable the transition pathway, and to reduce energy demand. Some submitters maintained that active and ongoing partnerships with iwi, businesses and consumers would encourage New Zealanders to use less energy across the board.

> With reduced pressure on increasing capacity, investment in new generation can then be focused around strategic moves to increase the resilience of our network and to ensure low cost energy is available to all New Zealanders. – Individual

Some submitters suggested developing roadmaps – particularly to signal how long transitional gases and fuels would be needed, with specific timelines to increase green hydrogen and biogas production. Most industry submitters supported targets for phasing out fossil fuels; however, they cautioned against moving too quickly. Many submitters wanted a clear and coherent pathway for

phasing in carbon-neutral options (eg, hydrogen and renewable LPG), developed in conjunction with industry.

Setting targets for the energy system

Most submitters supported the Commission's proposal for a renewable energy target of 50 per cent of all energy consumed by 2035. Many also suggested implementing a more ambitious goal of at least 60 per cent. Some submitters preferred the Government to focus on the national energy strategy instead of specific targets. They said the national strategy would better address the energy 'trilemma' of security of supply, sustainability and cost.

While some individual submitters supported a target of 100 per cent renewable electricity by 2030, most organisations and many other individuals supported the Commission's suggested target of 95–98 per cent. These submitters said the last 5 per cent would be disproportionally difficult and costly to abate. They said it would be more cost effective overall to invest in decarbonising harder to abate sectors, such as industry, heavy freight and aviation. Many industry submitters said meeting any such target would not be achieved without ramping up renewable electricity generation to replace fossil-fuel-generated capacity. Additional renewable infrastructure would be needed to maintain security of supply, for which clear and immediate government advice and action was crucial.

> We cannot afford to be held to such a high standard that we force brownouts or energy restrictions in dry periods. Security of supply is absolutely essential. – Industry body

Some submitters said any target must have flexibility to respond to technological developments to avoid constraining innovation. For example, a few submitters spoke about converting or repurposing the Huntly Power Station or New Zealand's Aluminium Smelter (NZAS) at Tiwai Point to produce green hydrogen or biomass. As this transition could not be implemented until Rio Tinto exited the country, it would not be factored into targets but should be considered.

Phasing out fossil gas

Most submitters supported phasing out fossil gas but diverged on the appropriate speed and mechanisms for this transition. Generally, individual and community submitters favoured phasing out sooner and more comprehensively, while industry wanted a slower phase-out than maintained existing infrastructure. For instance, many submitters said fossil gas helped maintain energy security, particularly by providing capacity during peak demand. While Aotearoa transitions to low- or zero-carbon electricity, many submitters saw fossil gas as an efficient short-term solution to displace coal, which is more carbon intensive. Some submitters saw value in maintaining existing pipelines, connections and appliance infrastructure for fossil gas to support eventual future demand for alternative, low-carbon gases.

Although the consultation document proposed a ban on new gas connections, most submitters interpreted this as an outright ban on all fossil gas. On this basis, most industry submitters opposed an absolute ban, preferring market solutions and incentives to accelerate decarbonisation in this area. They wanted emissions lowered through a mix of reduced use and demand, increased efficiency, improved management of fugitive emissions, and offsetting. Some industry submitters said an outright ban on fossil gas would reduce options and underestimate the true cost of abatement. Some of these submitters suggested specific models for phasing out fossil gas. These models included using the NZ ETS to both incentivise renewable energy investment and develop

green infrastructure to make up the difference in capacity generated by fossil fuels, or by developing a renewable gas mandate, such as the Government's proposed transport biofuels mandate.

Some submitters said that phasing out fossil gas would disproportionately impact low-income or vulnerable communities (on the basis these communities were more likely to be using gas appliances). These submitters wanted the distributional effects of any such phase-out addressed directly by the Government. A few submitters proposed mini or localised electricity grid systems for small communities that could replace individual gas connections. This would help move such communities away from relying on fossil gas. These submitters said these localised systems would enable a more diverse, and therefore resilient, energy system. Some other submitters said that improving thermal performance of homes could also facilitate and contribute to a just transition away from fossil gas.

> At the same time there are equity and access challenges for low income families, though these can be overcome by improving the thermal performance of houses, especially rentals and subsidising alternatives to gas. – Business

Work under way to decarbonise industry

To combine existing efforts to decarbonise industry, most submitters wanted clear timeframes for transitioning fossil-fuelled industries to stimulate infrastructure investment. Many submitters supported the Government developing an overall plan for decarbonising industry and wanted stakeholders to be closely involved in its establishment. Involving industry would support investment and ensure the plan reflected commercial realities and industry expertise. These submitters wanted the industry decarbonisation plan to form part of the national energy strategy. A few submitters commented that increased renewable energy supply was a crucial prerequisite to transitioning the industrial sector.

While some submitters said the NZ ETS should be the primary tool to reduce emissions from industrial processes, many others said the NZ ETS settings needed refining to prevent emissions leakage. A few industry submitters wanted the existing industrial allocation policy replaced with a national carbon border adjustment mechanism.

> A price on carbon would provide a strong economic signal to downstream customers to evaluate lower embodied carbon products - be that cement, clinker or low carbon cement alternatives. – Business

For process heat, some submitters said the Government Investment in Decarbonising Industry fund was successful and wanted this expanded to smaller industries. A few submitters noted the value of large industrial customers providing the electricity sector with flexibility by temporarily lowering their electricity demand during peak demand in return for financial compensation. This flexibility should be recognised by Government.

Challenges and opportunities to decarbonise industry

Most submitters said the Government should consider a combination of price signals, standards and specifications to guide decarbonisation in industrial sectors. Some industry submitters highlighted uncertainty about the availability and costs of low-carbon energy options as a barrier to investment. These submitters wanted support to identify technologies with high abatement potential and research into solutions for manufacturing processes that could not yet be electrified.

Many industry submitters wanted more government support for difficult to abate industries such as steel, aluminium and cement. They said these industries required significant capital investment to decarbonise beyond what was available privately. Funding could first be prioritised for R&D to find innovative ways to abate these industries. A few submitters also spoke about the importance of investing in infrastructure to mitigate production moving offshore.

Energy and Emissions Reporting (EER) scheme

Support for specific proposals

93 per cent of 94 Citizen Space submitters supported expanding the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme to include commercial and transport companies that meet a specified threshold. (Question 64)

The discussion document proposed a mandatory energy and greenhouse gas emissions reporting scheme for large energy users. Some submitters shared views on the definition of a 'large energy user'. Most individual submitters supported including commercial and transport companies within the proposed EER. These submitters wanted the EER to apply as broadly as possible to maximise its ability to reduce emissions. A few industry submitters opposed their inclusion, arguing that a system-wide approach to reducing emissions was needed instead of implementing initiatives in isolation as per the EER. Other submitters, who opposed including transport and commercial companies in the EER, wanted the NZ ETS to be used to reduce emissions instead of regulatory measures. A few submitters wanted the Government to engage closely with businesses to fully define the objectives of data collection and reporting requirements before introducing the EER.

Some submitters agreed with the proposal to classify large energy users by energy use or amount of greenhouse gas emitted, rather than company cost or size, as a way to capture a wider range of emitters or groups of small businesses who collectively might be classified as high energy users.

> We recommend that the Government considers how to treat conglomerates of small groups that together have high emissions that meet the threshold. – Local government

Many submitters held reservations about the proposed EER, arguing that it should be sufficiently flexible and adaptable to work with different industries and business models. A few industry submitters opposed distinguishing between small and large emitters in any industry, as this could create regulatory distortion or discourage investment.

Support for specific proposals

58 per cent of 64 Citizen Space submitters supported the proposed threshold of 1 kt CO_2e for large stationary energy users including commercial entities. (Question 65)

Submitter views were evenly divided on the proposed 1 kt CO_2e threshold for large stationary energy users with the EER. Among supporters, many recommended the threshold gradually reduce over time to widen the scope of the scheme until it captured around 90 per cent of all stationary emissions. Some submitters said an efficient data-collection system was needed to minimise the overhead for businesses that met the threshold. They suggested that mandatory energy reporting

would be more widely accepted if costs were managed through a simple and standardised reporting framework.

Among submitters wanting a lower threshold, some recommended halving it to 0.5 kt CO_2e to capture more businesses without creating overly burdensome requirements. Many others suggested lowering it to as little as 0.1 kt CO_2e to encourage greater transparency, including for consumers who wanted to know the carbon footprint of their suppliers. A few submitters agreed the threshold would give the country the data resolution needed to improve emissions reporting.

> A lower threshold also ensures that those who use a lot of energy for their size are more likely to be included, and it's not just those who use a lot of energy on a whole. – Community/NGO

Submitters predominantly supported large energy users, such as transport companies, being included within the same 1 kt CO_2e threshold as large stationary energy users. Some submitters said that, as the effect of emissions on the environment is the same, there was no reason to differentiate between different types of high emitters. Transport was central to most submitters' responses. Changes to the proposed threshold mirrored those for stationary users (eg, lowering to 0.5 kt CO_2e or 0.1 kt CO_2e to encouraging freight to be moved to electrified trains).

A few submitters were unsure if a threshold was appropriate for transport. These submitters said that decarbonisation would be better achieved through an efficiency rate of tonnes per km/MW, not a sheer volume or capacity of the company.

A few submitters raised other challenges related to defining large energy users. Challenges included reporting emissions in operations that were widespread around the country and comparing emissions from differently structured companies.

> It is anticipated that it may be difficult to compare businesses due to different structures for various companies. As such, the reporting regime should allow for a more nuanced approach. – Individual

Some submitters wanted emissions benchmarks or reporting against indexes within sectors to incentivise businesses to reduce emissions. A few submitters described perverse outcomes because of profit seeking and transport costs not reflecting environmental impacts.

Government support for development of low-emissions fuels

Most submitters supported increased government funding for producing low-emissions fuels. Submitters raised hydrogen and to a lesser extent biofuels as technologies warranting government-funded research and support. Few submitters were specific about the level of support, instead stating that it needed to align with the Government's ambition for the sector.

> The Government should provide an appropriate level of support that reflects its ambition on the development and use of low-emissions fuels. This level of support must allow a quick decarbonisation of industrial heat, electricity and transport to achieve our international and national commitments regarding our emissions. – Local government

Consistent with views in section 15, 'Transport', many submitters said low-emissions fuels should only be used as transitional energy sources while zero-emissions fuels were being developed and scaled up.

Building and construction

Key themes and messages

The main themes in this section were the need for an overhaul or updates to the Building Code, upgrades and retrofitting of existing building stock, working with other sectors on circular and energy-efficient approaches, and transforming the workforce.

Some submitters highlighted the impact of the built environment on the country's emissions. Submitters noted that it was a major driver of demand for emissions-intensive materials, and that the sector would benefit from a broader focus on the built environment rather than just construction of buildings. A few submitters wanted better measures and tools (such as easy to understand, consumer-facing rating systems) to aid with transitioning the sector to a lower-emissions future. Some submitters highlighted the need to measure and address embodied emissions as well as operational emissions.

Many submitters supported 'wood-first' initiatives, such as: using locally manufactured timber framing in residential and commercial construction, investing in tropical hardwood substitutions, and building 'wood-first' and wider sustainable construction priorities into social and environment procurement best practice. A few submitters disagreed with timber as a sustainable option, considering that it removed carbon sinks and created onsite waste. These submitters generally supported efforts by concrete and steel manufacturers to find green alternatives to production methods.

Submitters had mixed views on the use of concrete and steel as construction materials. Many submitters wanted the sector to move away from concrete and steel, and to use low-carbon or recycled building materials instead. Some submitters supported the continued use of concrete and steel; a few submitters considered concrete as an enduring carbon sink within buildings and infrastructure.

A few submitters discussed emissions caps for buildings to incentivise energy-efficient, passive homes. Other submitters were concerned that emissions caps could further constrain building materials available to the sector, adding to the cost of construction. These submitters highlighted the need for sector consistency with Government objectives on housing availability and affordability.

A few submitters commented that housing quality is integral to an equitable transition. Most submitters wanted energy-efficient, sustainable homes for New Zealanders. These submitters wanted better insulation and double glazing. Some submitters made other suggestions, such as: more social housing, banning dark paint for houses, incentives for homeowners to install solar panels, and the removal of fossil gas use in households. Some submitters wanted the Government to adopt the recommendations made by the Green Building Council of New Zealand in its submission to this consultation. Other submitters said the emissions reduction plan lacked any real strategy or response to improving existing housing stock, and more ambition was required to avoid the status quo.

> New Zealand's buildings are no good. For decades, we have neglected our building code and under invested in our existing stock. Now our homes are too cold and damp and the health service is spending billions of dollars each year treating New Zealanders suffering from building related health and wellbeing problems. Now we are in the midst of a construction boom that will build thousands of homes. Building to current standards will lock in high energy requirements and poor health and wellbeing for decades to come. – Individual

A few submitters commented more broadly on urban development and resource management, consistent with the themes highlighted in section 12, 'Planning'. These submitters called for more high-density housing and less car-intensive suburbs. Other submitters wanted better protection of green spaces in urban settings and for the Government to plan where building occurred, not just what was built.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 278 submissions (including at least 85 organisations) from emails and Citizen Space.

Mandatory participation in energy performance programmes

Most submitters supported mandatory participation in energy performance programmes. A few submitters wanted this extended to residential buildings. Submitters said measuring energy performance was important and should be compatible with Building for Climate Change (BfCC) and relevant legislation such as the RMA and Building Act.

> A mandatory energy performance programme would encourage hesitant building owners to think about energy efficiency and how to maximise the potential efficiency a building can have. The programme would need to encompass all areas where energy efficiency can be achieved, to account for entire life embodiment of carbon emission. – Industry body

Many submitters said new builds would last for decades and so these buildings must be energy efficient. Other submitters focused on the need to improve energy efficiency in existing housing stock. Some submitters were concerned about unintended negative consequences from an energy performance programme such as high compliance costs for builders, homeowners and lower socioeconomic groups.

A few submitters wanted more detail than provided in the discussion document, including on enforcement and non-compliance penalties. A few submitters, who supported an energy performance programme, were unsure whether mandatory participation was feasible without financial incentives or assistance.

Reducing emissions from other sectors

The discussion document asked what the Government could do to help the building and construction sector reduce emissions from other sectors such as energy, industry, transport and waste. Most responses focused on energy and waste. On waste, some submitters wanted incentives to increase the use of repurposed and recycled building materials as well as better waste management on and off building sites. On energy, many submitters wanted incentives to retrofit existing housing stock to increase energy efficiency, while some wanted more regulation encouraging energy efficiency in new builds. A few submitters said additional regulation would slow down efforts to lower emissions and increase costs for the sector.

Many submitters focused on the Government as a key procurer of building and construction services. They wanted both central and local government to procure according to emissions standards. Many also wanted the Government to set an example with public buildings (eg, solar-powered air conditioning in hospitals).

> 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. – Industry body

A few submitters said better research and operational data was needed to help the construction sector reduce emissions related to other sectors. Others wanted tools or guidance to better understand embodied carbon and other activities that generate emissions in building and construction. Other submitters thought the Government should focus on better building design and horizontal infrastructure.

Eliminating fossil-fuel use in buildings and ending new connections

Most submitters supported ending new fossil gas connections and fossil gas in buildings by a set date. Many submitters supported bringing forward these dates, commenting that the discussion document lacked urgency. Many submitters wanted the Government to support a transition to renewable alternatives such as renewable LPG, biogas, biomethane and green hydrogen in buildings.

> An early ban on new fossil fuel connections for commercial buildings is encouraged. Alternatives to fossil fuels for space and water heating in commercial buildings are available. Transition to these alternatives should be encouraged through financial incentives, accessible to all building owners, that will encourage early replacement with electric alternatives or conversion to renewable fuels. – Business

Some submitters opposed a date to end new fossil-gas connections, as alternative renewable gaseous energy sources would require the same infrastructure and so ending new connections could close off some renewable options in the future. Some submitters were concerned about the cost of and the lack of currently viable alternatives to fossil gas, and the ability of these alternatives to generate sufficient electricity.

A few submitters said the Government needed to remove barriers to adopting new technologies to support alternative electricity generation, storage and consumption. Other submitters wanted the Government to help offset the increased design and installation costs that would come with renewable alternatives.

Addressing the use of fossil fuels in boilers

All submitters who answered this question supported in some capacity a move away from fossil fuels in boilers used for space and water heating in commercial buildings. Many of these submitters wanted investment and incentives to move towards renewable alternatives, particularly renewable gases. Some submitters supported alternatives such as wood chips and pellets, biomass, or electrification of water and space heating. Other submitters thought the only way to ensure the issue was addressed was through regulation and government mandates.

> [We] suggest 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. – Local government

Although the question referred to commercial buildings, many submitters discussed residential buildings as well. Some submitters said the best approach was improving the general energy efficiency of the country's commercial buildings and housing stock, particularly through retrofits. These submitters wanted subsidies for retrofits.

> 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. – Business

Many submitters supported localised solar energy as an alternative to fossil fuels in boilers. Other submitters suggested levies on fossil-fuel boilers, or education about alternatives.

Adverse effects for particular people or groups

Support for specific proposals

65 per cent of 86 Citizen Space submitters agreed the Government's policies and proposed actions to reduce building-related emissions will adversely affect particular people or groups.
(Question 74)

Most submitters said the Government's proposed actions would adversely affect particular people or groups if not managed properly. Many of these submitters commented that communities that were already disadvantaged would be most adversely impacted.

> The issue disproportionately affects younger and minority groups in New Zealand. Social and health impacts include inequity, homelessness, and overcrowding. In this context, the case for changing regulation for housing must be weighed against the associated costs, to ensure that any changes will provide the desired benefits, but without excessive cost… Building Code changes directly impact the cost of building, and therefore housing affordability, when standards are imposed that exceed what well-informed consumers would otherwise choose. – Business

Some submitters suggested adverse impacts could be reduced by limiting investors, rent controls or caps, more social housing and greater taxation on the wealthy. Other submitters considered that the greatest adverse impacts would come from not doing enough to reduce emissions.

Many submitters said businesses and their staff in the sector (eg, builders, gas fitters, and concrete and steel manufacturers) would be adversely impacted by these proposals. Submitters wanted clearly signalled changes and timeframes to help these sectors transition. Some submitters supported the National Australian Built Environment Rating System – New Zealand adaptation (NABERSNZ) system to enable change in this sector.

A few submitters wanted more focus on the adverse impact on property owners and investors. A few submitters wanted more focus on first-home buyers, who could often only afford older, less energy-efficient homes.

Ensuring the needs and aspirations of Māori and iwi

The key themes from submitters were the need to honour Te Tiriti, make funding available to iwi and Māori to participate fully in governance and resource management, integrate te ao Māori in the Building for Climate Change (BfCC) programme, and recognise current and historic inequities including housing. A few submitters highlighted challenges for Māori to develop papakāinga due to building and planning regulations.

Submitters wanted the Government to listen to iwi and hapū at all levels of decision-making. Submitters highlighted environmental and other impacts on Māori because of Crown decision-making. Some submitters advocated for making funding available to iwi and Māori to participate in governance and resource management. Some also wanted increased funding for Māori initiatives and scholars. These submitters also highlighted current and historic inequities and the effects of these on Māori. These submitters suggested the Government partner with iwi to jointly deliver housing programmes.

Submitters supported integrating te ao Māori in the BfCC programme. They wanted the relevant Ministry to set up a mātauranga Māori advisory group for the sector.

> …develop a construction sector-specific mātauranga Māori advisory group to provide feedback to the sector and support emissions reduction initiatives. It is essential that our sector has actions and policies that incorporate mātauranga Māori and that they are undertaken in a way that is appropriate to kaupapa and tikanga Māori. – Industry body

Proposed behaviour change activity

Support for specific proposals

94 per cent of 95 Citizen Space submitters supported the proposed behaviour-change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople). (Question 76)

Many submitters generally supported the proposed behaviour-change activity for the building and construction sector. Some of these submitters agreed with the focus groups. Some submitters wanted more education and upskilling for the building workforce, with many seeing regulation as an appropriate way to do this.

Some submitters said consumers had little influence on the sector and thought the focus should primarily be on the building and construction industry. Some of these submitters were concerned about the cost of building materials for the sector. Other submitters wanted to make government regulations and initiatives easier to understand. A few submitters suggested tools such as Energy Performance Certificates, Homestar, Greenstar, NABERSNZ, Infrastructure Sustainability Council of Australia rating scheme (ISCA) and LCA Quick (a life-cycle assessment tool) to enable behaviour change in the sector. Submitters raised the need for consumers to be educated on the potential impacts of policy change, such as increased consumer costs and changes to make their homes more energy efficient.

A few submitters were concerned about unnecessary compliance costs. They said consumers and industry were too far down the chain to make real impact. A few submitters said there needed to be

more focus on those who design buildings (eg, architects and engineers). A few submitters thought there needed to be a wider focus to include central and local government.

> This assumes that it is a lack of awareness that is the problem. I suggest turning the telescope back on yourself and becoming deeply aware of the conditions that the government is currently creating that leads to the current behaviours. If you want different behaviours, create different conditions, that invite environment appropriate actions of consumers and industry. – Individual

Key areas for a contestable fund

Many submitters supported the proposed contestable fund to encourage innovation in the building and construction sector. A few submitters preferred different funding models, such as a collaborative fund or an equivalent to the Low Emission Transport Fund. A few submitters emphasised a simple, low-cost process to apply for such funding. Many submitters wanted the fund to focus on retrofitting existing housing stock. They said the fund should support new pilots, innovation, technologies and methodologies for efficient and cost-effective retrofit programmes.

> Buildings already built today will still form the bulk of the building stock in 2050, and it is crucial that they are at the near zero energy standard by then to enable the transition to 100% renewable energy consumption by buildings and free up energy for other sectors to decarbonise. A fund could usefully pay for a pilot programme to retrofit 10 NZ homes to 'deep retrofits' levels to flesh out the products and methodologies needed to bring a range of existing building types up to this standard. – Community/NGO

Some submitters said innovation to drive low emissions in the building and construction sector needed to be addressed alongside the broader transition. There should be a strong link to the circular economy, minimising waste and promoting recycled building materials. Other submitters wanted the fund to focus on creating more energy-efficient homes, highlighting the need to work across both the building and construction and energy sectors when designing, building and retrofitting housing stock.

In addition to the initiatives covered in the discussion document, most submitters wanted more incentives and initiatives to use low carbon, locally sourced, repurposed and recycled building materials. Some submitters said current standards were a barrier to recycling and reusing building materials and should be updated to align with the Climate Change Response Act 2002 (CCRA) to promote the use of such materials. A few submitters said the market for reused construction materials may not be as great as envisaged due to old materials not meeting current or future standards.

Most submitters wanted construction waste reduced, with a key issue being separating waste streams. Some submitters supported initiatives to sort and separate construction waste at offsite processing facilities, while other submitters wanted onsite waste-stream separation.

> Waste is a particular concern for the building and construction industry. It has been estimated that construction and demolition waste may represent up to "50% of all waste generated in New Zealand" (Greater Wellington Regional Council). BRANZ research has identified an industry willingness to support waste reduction, but this is often impacted by the lack of cost-effective infrastructure. – Business

Many submitters said any initiatives or incentives must be developed through partnership with industry. Most submitters wanted the Government to partner directly with the building and

construction sector – consultation alone was insufficient. Many submitters wanted better partnership with iwi.

Encourage low-emissions building and retrofits

Regulation was a key theme. Some submitters wanted immediate updates to the Building Code and tougher benchmarks for the sector to encourage the use of low-emissions building materials and methods. Some submitters considered the best way to encourage low-emissions buildings and retrofits would be incremental improvements to embodied carbon and operations emissions. Most submitters agreed cost was a key barrier to low-emissions buildings and retrofits. Many submitters wanted the Government to consider rebate schemes.

> The easiest way to encourage retrofits for both homeowner and builder is to have a rebate scheme. As costs to retrofit a home can be substantial and are set to continue due to the short supplies in the construction industry, a rebate scheme based on performance and improved energy efficiency of a home would be beneficial. A rebate scheme would stimulate the industry and encourage homeowners to take the first step of consulting a builder on how to improve energy efficiency in their home. Specific areas rebates could focus on are insulation, double glazing of windows and overall thermal leakage reduction. – Industry body

Other submitters wanted incentives or rebates for solar power installations and subsidies for low-carbon building materials. Some submitters wanted the Government to fund retraining or education schemes to upskill the sector.

Ensuring the right workforce at the right time

Most submitters said the sector needed a combination of retraining, upskilling and attracting more people to the sector. Many submitters considered changes to vocational training were necessary.

> Enabling our building and construction industry to regularly achieve this standard of zero-carbon construction would require significant changes to how we understand and undergo training and qualification within Aotearoa New Zealand's vocational education system. A new conceptualisation of the building and construction training and curriculum is required so that it can be centred around the transition to zero-carbon – especially zero-carbon construction. – Business

Other submitters considered investment in education or continued professional development was essential for upskilling and transforming the current workforce. These submitters commented that there was very little focus on energy efficiency or carbon in the built environment as part of apprentice training. Many submitters called for government incentives or funding for training programmes across all groups in the sector, such as architects, designers, builders, manufacturers and suppliers. Others suggested aligning immigration policies to remedy skill shortages in the sector, and improving sector culture, pay and development opportunities to attract young people to the workforce.

Ensuring all New Zealanders benefit

Submitters overwhelmingly supported efforts to ensure warm, dry, safe and durable homes for all New Zealanders. Some submitters said that clear strategies and actions were needed to achieve this vision. A few submitters criticised a lack of partnership in previous approaches by the Ministry of

Business, Innovation and Employment (MBIE), citing this as a reason for delays in improving standards of housing stock in Aotearoa.

Many submitters called for more regulation, specifically higher standards for homes. Most of these submitters supported thermal performance requirements, while some others suggested solutions such as a rental warrant of fitness. Submitters were primarily concerned with the quality of existing housing stock over new builds. Some submitters said support was required for everyone, not only those with low incomes, as many homeowners are cash poor and could not afford to retrofit their homes. A few submitters emphasised this barrier to achieving large-scale change and suggested that an equitable transition must be accompanied by support.

> There is still much to do to improve the habitability of our housing stock to be warm dry and healthy…Landlords/building owners have had to be dragged hard to get the smallest upgrades to our housing stock acted on and we still have houses that are substandard through lack of action or resulting bottlenecks on builders. In being part of a home assessment program, we regularly found that landlords either had so much work to do on their rentals that they would only select the bare minimum to tick the boxes to meet the minimum of the improved standard or were not aware of the long-term benefits of investing in their tenant's wellbeing and happiness to live in a house. – Community/NGO

Agriculture

Key themes and messages

While the discussion document outlined actions the Government was taking for the sector, including through He Waka Eke Noa, most submitters focused on agriculture accounting for 48 per cent of the country's gross greenhouse gas emissions. The large number of livestock in Aotearoa was, therefore, considered the major contributor to climate change. Many submitters, especially individuals, considered that stock numbers needed to reduce and farming move away from intensive animal agriculture. These submitters said farming needed to shift to horticultural or plant-based protein options to support future-proofed food production that is low in emissions and supports food security. A few submitters highlighted positive economic impacts of such a shift, such as decreased reliance on imported foods. Some of these submitters considered the Government needed to drive this work and encourage farmers to move away from dairy, for instance by introducing regulatory limits on herd sizes.

Many submitters noted that He Waka Eke Noa was pushing hard to improve the agricultural sector's response to climate change and to upskill farmers on measuring their on-farm emissions and how to manage and reduce emissions. However, submitters said the Government could not rely on this measure alone. These submitters wanted the Government to provide other incentives to encourage farmers to change their farming practices (both positive and negative – such as introducing tax incentives for reducing herd sizes and facilitating access to new export markets for organic produce).

While the focus was on reducing animal emissions, some submitters noted that there were other opportunities to reduce agricultural emissions. These submitters used the term 'regenerative agriculture' without necessarily defining this term. These submitters raised examples of regenerative farming practices, including reducing the use of synthetic fertilisers, fungicides and pesticides and focusing on rebuilding soil organic matter; diversification of crops and animals; restoring nature through the protection of waterways, and replanting native trees on unproductive land. Submitters recommended that the Government provide appropriate incentives and support to enable farmers to move to regenerative farming practices. A few submitters suggested the Government provide

more information on what a pathway to regenerative farming would look like and what would be expected from farmers making this transition.

Some submitters said the Government should establish transition hubs to facilitate innovation, farming extension services and information-sharing about shifts within the sector, and set up a regenerative farming fund offering financial security as farmers and growers move to regenerative organic practices. Alongside these measures, submitters commented that the Government needs to subsidise sustainable or emissions-reducing technology (eg, culture additives and feedstock changes, methane inhibitors, methane vaccines, soil moisture monitoring and gene editing), invest in new and existing research on agricultural climate-change practices, educate farmers about the need to reduce emissions, and upskill and train advisors to support farmers to move to regenerative farming practices that restore soil, water and air quality. However, a few submitters were concerned that relying on technology that has not yet been developed could prevent an urgent response to climate change.

These submitters also raised the NZ ETS, with most stating it should include agriculture. They said that for a long time the farming sector had avoided the NZ ETS resulting in a lack of progress and an impossible burden on other sectors. These submitters emphasised that agriculture should be included in the scheme now, not in five years' time as envisaged in He Waka Eke Noa.

A few submitters noted that Aotearoa farmers and growers have started measuring and reducing their emissions. For example, many farmers have included emissions-reduction practices in their farm management plans, with some submitters stating that this should be a requirement for all farms.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 291 submissions (including at least 77 organisations) from emails and Citizen Space.

Better support for farmers and growers to reduce their emissions

Many submitters identified regenerative agriculture as the greatest opportunity for farmers to reduce emissions (eg, supporting soil biodiversity to better mitigate nitrous oxide emissions). Some submitters referenced evidence of the success of regenerative agriculture, such as market research reports produced by the Aotearoa Circle[4] and Organics Aotearoa NZ[5], and various international examples of successful regenerative farming initiatives. As mentioned above, the term 'regenerative agriculture' was not well-defined by submitters and it was likely used in a broad sense. However, these submitters noted that advisors and farm consultants lacked sufficient capability and capacity to deliver appropriate support to farmers on practices to reduce emissions.

> The existing sector (particularly the regional councils and CRIs) advisory resources will not be enough to deliver on the transformation required. Current new requirements are already putting pressure on the sector's advisory and farm consultancy services (eg, compulsory farm planning and freshwater regulatory requirements). – Local government

[4] https://www.theaotearoacircle.nz/

[5] https://www.oanz.org/

Submitters suggested a range of solutions to support and target farm advisory and extension services, including:

- Government-funded programmes to upskill and train farm advisors and consultancy services in regenerative farming practices
- using established networks (eg, catchment groups and rural women's groups) to disseminate relevant knowledge and information
- Government-provided localised information for rural communities on the impacts and opportunities associated with climate-change mitigation and adaptation distributed through community networks and forums
- incentives schemes (eg, the Government would set emission-reduction targets and reward farmers and growers who reach these targets, or a scheme where farmers were financially rewarded for diversifying their crops. Some submitters suggested hemp, quinoa, amaranth, miscanthus and other crops as potential options).

Many submitters said Māori collective landowners were constrained from implementing change by their financial models and land-ownership structures (eg, by the Te Ture Whenua Māori Act 1993). They noted that specific funding support and timeline consideration was needed.

> Māori-collective owners face even more difficulty accessing capital than individual farm owners, due to the lack of institutional and legal support for collective ownership, with incorporation being the only conventional route. The government could help by putting collective owners at the head of the queue for compensation, and by legal innovation to allow the legal and financial system to better handle Māori collective ownership. – Individual

Submitters commented that funding should focus on iwi-led initiatives and Māori community initiatives, including mātauranga Māori (indigenous scientific knowledge). Some of these submitters added that the Government should consider further funding for Māori-specific farm advisory and extension services, such as internship and training programmes, and building sound relationships and trust with Māori collective landowners. This support would enable Māori landowners to use land in ways that built resilience, stored carbon and cut emissions.

On-farm mitigation practices

Most submitters said the Government needed to provide funding to encourage the uptake of on-farm mitigation practices, including the nature-based solutions being used on high-performing farms (eg, planting riparian strips, protecting and constructing new wetlands, planting hedgerows and native tree stands and undertaking pest management). Submitters suggested the Government should encourage other farmers to adopt these practices through the provision of quality evidence-based information and training, showcasing best practice and codifying best practice with appropriate regulations.

A few submitters discussed Government-supported transition hubs to ensure farmers have all the information and choices available to shift production modes and obtain funding for regenerative farming practices.

A few submitters suggested the Government introduce a regulatory framework to drive de-intensification and land-use change from intensive livestock farming. Specific measures could include phasing out synthetic fertiliser and imported palm kernel extract feed in farming, and limiting stocking rates. A few submitters suggested extending the scope of Farm Management Plans to cover all land-use matters relating to farms, including emissions and abatement activities.

What research and development on mitigations should be supported?

Many submitters said the focus of research and development should be on increasing productivity to support reducing dairy herd numbers. Other submitters said the Government should continue to invest in research and development initiatives, for example, those related to ruminant digestive functions and improvements in the Overseer farm-management software (including its GHG module).

A few submitters said the Government needed to continue to support the mitigation tools being developed by the Pastoral Greenhouse Gas Research Consortium and Crown research institutes, such as the New Zealand Agricultural Greenhouse Research Centre within AgResearch. A few other submitters wanted the Government to continue to support the Global Research Alliance on Agriculture Greenhouse Gases.

Submitters provided a spectrum of ideas for new research and development opportunities. Common suggestions included more research into soil carbon – especially into the different climates and soils throughout Aotearoa, research into reducing methane through emerging technologies (methane inhibitors and the methane vaccine), supporting and expanding Our Land and Water's research into regenerative agriculture, as well as research into the success of regenerative agriculture in general. Other submitters commented on the need to proactively use existing overseas research on organic and regenerative systems. A few submitters noted that research was needed into mātauranga Māori and knowledge systems such as the Mauri Ora Framework. This was seen as a vital component of transitioning agriculture to sustainable practices suited to the Aotearoa environment. A few submitters discussed the importance of supporting new methods and technologies with a robust regulatory framework.

> ...provide 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. – Industry body

Environmental credentials for low-emissions food and fibre products

Many submitters wanted Aotearoa to demonstrate meaningful efforts to reduce the emissions intensity of its food products, as well as diversify into low-emissions produce beyond what has already been achieved. Submitters suggested the Government showcase those who are already leading in these areas and continue to support them (eg, Miraka, Tohu Wines and Wairarapa Moana Farms).

Some submitters noted the potential of Māori entities to participate at all levels of the farming sectors as leaders, business owners, producers, researchers and holders of traditional knowledge.

A few submitters referred to the Hua Parakore system of food production, which was the world's first indigenous verification and validation system for kai atua (pure food). This system operated on various farms in Aotearoa and was available to other indigenous producers around the world.

> Hua Parakore is an indigenous Aotearoa enriched view of organics that with further development could easily be shared internationally. Financial support needs to be provided to Te Waka Kai Ora to further develop and encourage farmers to increase the use mātauranga Māori principles. – Industry body

Submitters said that a genuine Tiriti partnership was essential to embed indigenous practices that will mitigate climate change and enhance food security.

A few other submitters said it was important that Farm Management Plans included all emissions and abatement on farms, as this would allow individual farms to provide food-source-traced data. Others said the Government should work with industry to create a voluntary branding/marketing campaign for zero-/low-carbon certified products and farms. This labelling scheme could be similar to the Energy Efficiency Conservation Authority labelling for domestic whiteware.

Reducing barriers to enable lower emissions farming systems and products

Many submitters said cost was the main barrier to changing land use to lower-emissions farming.

> There are unlikely to be any barriers other than financial sustainability of the farming systems. Low cost finance for transition would be an appropriate tool if lower emissions farming systems that maintain profitable food and fibre production can be shown to exist and can be scaled to NZ wide production levels. – Individual

A few submitters said the Government needed to invest in regenerative agriculture, including supporting the costs of converting to regenerative organic farming methods. Examples included providing grants for agroforestry, cover-cropping and reduced tillage, and constructing facilities to process regenerative organic and plant-based foods.

Other submitters commented that if farmers were aware that they could get more money or be more productive by adopting different practices, then farmers would implement these. Submitters said that the Government should provide tools and information to support decision-making on land use, including to ensure environmental sustainability and economic stability.

Several submitters noted that farmers in Aotearoa were generally responsive to market signals, including cost. These submitters suggested that farmers would make their land-use decisions based on relative profitability and that any Government intervention should avoid muting market signals or distorting market forces.

Forestry

Key themes and messages

The main theme on this topic was support for native forestry, especially as opposed to established or new pine plantations. Most submitters said the most important thing was establishing new, and regenerating existing, native forestry in Aotearoa. To support this, most submitters said the Government should support or incentivise native tree planting. Some submitters also suggested more technical support for landowners for native tree planting. Native tree planting was recognised by some as an opportunity for re-establishing native flora and fauna and for improving biodiversity outcomes.

Most submitters said the most important thing is for changes to be made to the NZ ETS to recognise the value of native forestry. In particular, these submitters said that the long lead time for native tree sequestration and the benefit of native trees needs to be acknowledged. Some submitters also recommended limits for carbon offsets through the NZ ETS.

> Encourage native revegetation and change ETS to reward retention of native vegetation, wetlands, riparian areas, rather than planting pine forests with their horrendous outcomes on soil, pollution, destruction of landscape, waterways etc. – Individual

Some submitters emphasised the importance of gross emissions reductions and that the core focus should be on this, as opposed to relying on forestry offsets. Some submitters also raised concerns for rural communities from extensive exotic forestry, commenting that it led to negative outcomes for rural livelihoods. Submitters highlighted the need to ensure that the right tree is grown in the right place, at the right time.

Many submitters suggested more investment in forestry processing in Aotearoa as a new initiative and opportunity for the forestry sector. Many submitters suggested investing in the milling of logs in Aotearoa for building and paper industries. Submitters regarded the Forest and Wood Processing Industry Transformation Plan as a key initiative to reduce potential impacts on rural communities.

Many submitters discussed the carbon storage in harvested wood products and called for this to recognised. Some also suggested using more timber in construction and other places where it would remain for many years. This was linked to the domestic timber industry, with some submitters encouraging the reuse and recovery of timber-based products and the need to build an indigenous timber industry.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 312 submissions (including at least 86 organisations) from emails and Citizen Space.

Should forestry provide a buffer for emissions reductions?

Support for specific proposals

62 per cent of 173 Citizen Space submitters agreed we should look to forestry to provide a buffer in case other sectors of the economy under-deliver on reductions, or to increase the ambition of our future international commitments. (Question 106)

There were mixed views among submitters who provided further comment on this question. Many submitters explicitly supported forestry being used as a buffer or to increase the ambition of our future international commitments. For many submitters their support was conditional on forestry being used as a buffer provided it was limited to planting native trees. These submitters argued there were benefits in native trees compared with exotic forestry; native afforestation provided a more stable carbon sink and could provide better outcomes in terms of biodiversity and fire risk. Some submitters agreed that forestry could provide a short- to medium-term buffer in the event of under-delivery in emissions reduction.

> An exclusive focus on carbon, while not valuing biodiversity and other ecosystem services, produces an unwarranted bias towards exotic tree species. – Community/NGO

Some submitters opposed this approach. They said Aotearoa should focus more on gross emissions reductions than forestry. Forestry should not be considered a long-term solution to the need to

reduce emissions and should not be used as an excuse for slow or ineffective action in gross emissions reductions, namely in non-performing sectors. Some submitters said a buffer preserved the right of an emitter to transfer their liabilities to other sectors.

Government support for rural communities

There was a wide spectrum of views on this question. Some submitters suggested the Government could provide support through enabling a bioenergy industry in Aotearoa as an alternative to fossil fuel use. These submitters stated that the Government could facilitate this through research and development in the sector, ensuring there were no regulatory barriers slowing down the sector's development, and by supporting initiatives to increase domestic processing of wood and wood residues.

Some submitters recommended the Government could do more to train and advise people in rural communities on native forestry. Submitters suggested the Government could train more people to undertake pest control and weeding to enable more native forestry. Some submitters said the Government should incentivise landowners to plant more native trees by changing settings in the NZ ETS, so that it includes GHG capture and sequestration as well as other ecosystem services. This was linked to employment opportunities in rural communities:

> 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. – Community/NGO

Establishing native forestry on private land

Many submitters said that Government funding and supportive policy settings were needed to establish and maintain native forest. These submitters advocated for funding to cover the cost of planting and pest control.

> Greater financial incentives for private landowners – a price differential between exotic plantations and permanent indigenous forest is needed to better reflect the multiple benefits provided by native forests such as, biodiversity, surface and ground water quality, land stability and lower fire risk. – Local government

Some submitters said the NZ ETS needed to change. They suggested removing barriers to registration for private landowners. NZ ETS reform could also improve the financial competitiveness of permanent native forest. Some submitters suggested prioritising native forest regeneration over planting native forest. This was considered less resource intensive and more cost-effective. Some submitters sought more advice on ecological matters and on methods and costs associated with native planting or regeneration.

What sort of forests should the Government encourage?

> Exotic to native transition forests but only if they are supported by management that ensures permanent legal protection, ongoing pest control and enhancement planting where required for diversity. – Individual

Many submitters supported native planting and an exotic-to-native transition. These submitters said the benefits of native forestry included improved biodiversity and longer-term carbon storage. Some

of these submitters also highlighted the need for more pest control and other measures, and the lack of financial incentive for native tree planting. Some submitters supported continuous canopy harvest for both exotic and native forestry, as opposed to clear-felling, which they considered had more negative consequences.

Most submitters supported limits on different types of permanent exotic forest systems (eg, *pinus radiata* versus long-lived redwood species) their location or management. The main reasons for limits included the risk of supplanting economically productive arable land and negative impacts associated with increased afforestation of exotics. Other reasons for support were improved biodiversity and that limits would mitigate impacts on rural communities from large-scale afforestation.

> The Climate Change Commission was clear in its advice that without limits, offsetting using afforestation will continue to delay real reductions in CO_2 emissions and the impact on communities and future generations will be significant and irreversible. – Individual

Submitters who opposed limits were concerned it would restrict the country's climate-change ambition. They said permanent exotic afforestation could help to bridge the gap on any emissions-reductions shortfall.

Submitters proposed a range of policies and initiatives to seize the opportunities associated with forestry while managing any negative impacts. The most common was changing NZ ETS settings, specifically to recognise regenerating native permanent forestry in the permanent forest category of the NZ ETS. Others suggested that NZ ETS settings should value biodiversity as well as carbon.

> In addition, the ETS should be urgently revised to include a permanent forest category, reserved for native forests, that earns NZUs comparable with pines, in recognition of their superior sequestration of carbon over time. Short lived exotic monocultures should be specifically excluded from this category in the ETS. – Community/NGO

Some submitters recommended an integrated landscape approach for forestry decisions. This would ensure the potential trade-offs and priorities of other sectors were considered. Some submitters wanted foreign ownership of exotic tree plantations stopped and reversed.

Afforestation to replace other energy sources

Support for specific proposals

84 per cent of 150 Citizen Space submitters supported more afforestation if we use more wood and wood residues from our forests to replace high-emitting products and energy sources. (Question 110)

> Using more wood and wood residues to replace non-renewable resources is a fundamental transformation pathway for New Zealand. – Business

Most submitters supported this proposal. For those submitters who provided additional views, many submitters considered wood and wood residues provided a better option than non-renewable sources of energy. These submitters also gave conditional support for afforestation and planting for wood bioenergy if occurring only in a well-controlled system applying robust management principles and as part of an integrated landscape.

Submitters who opposed the proposal were unconvinced that generating bioenergy from wood and wood residues was economically feasible in Aotearoa. Some of these submitters raised concerns over the energy required for processing wood for bioenergy. Some opponents considered other renewable energy sources should be prioritised, such as wind and hydroelectricity.

The role of government and the private sector

> Introduce incentives and grants to incentivise private landowners to set-aside and protect land for carbon sequestration and conservation and reduce up-front establishment costs. – Community/NGO

There were diverse views on the appropriate role of central and local government. Many submitters said the key role of central government was to amend the NZ ETS to enable a wider spectrum of participants and to disincentivise planting exotics. Some submitters suggested reforms also support local government to influence the location and scale of afforestation. Some submitters recommended that central government have a role to increase funding (grants) and incentives to increase native forest planting.

Some submitters recommended central and local government work more closely together. They recognised the role of local government to develop locally appropriate plans and policy, and central government to monitor and indicate which land was suitable for which purposes. Some submitters said both central and local government should work together on zoning suitable areas for forestry.

Some submitters said the private sector had a role in influencing the location and scale of afforestation. Some of these submitters noted the private sector had local knowledge of the land, which should be drawn on; while others stated that while the initiative should come from the private sector, it should be managed by government. Some submitters considered the Government had the primary responsibility to protect natural resources.

Support for pest control and management

> When thinking about the role that native afforestation/natural regeneration can play in climate change mitigation, it is critical to consider one of the key barriers to successful carbon sequestration – pest animals (especially feral ungulates). – Community/NGO

Most submitters said the Government should provide more funding or incentives to landowners and community organisations for pest control. Incentives could be provided for best-practice pest control. Some submitters suggested the Government should offer subsidies for pest control to ensure native afforestation was successful. Many submitters highlighted the risks pests presented to carbon sequestration and storage in forests. Some submitters recommended the Government recognise the importance of pest management to increase or maintain carbon sequestration.

Many submitters referenced the Predator Free 2050 goal and recommended work towards this was continued and well-funded. Some of these submitters also suggested it be expanded to include specific pest eradication. Some submitters recommended more research into technology and the development of innovative pest-management solutions.

Priority forestry issues and policies from an iwi/Māori perspective

> The key issue here is to allow Māori with options to use their land. – Business

Many submitters said the Māori concept of kaitiakitanga, especially in relation to forestry and other land use was of central importance. Some submitters also called for the Government to investigate the different issues with the NZ ETS for freehold general title land and Māori land. A few submitters raised other equity issues with forestry on Māori land, and with ensuring they can gain credit. Submitters mentioned the importance of ensuring Māori land is not alienated under the NZ ETS. With reference to existing pre-1990 forest, one submitter said:

> Māori have been strongly disadvantaged in terms of returns on their forests in this category. Many have never through their settlements gained any credit for the carbon absorbed by these forests or a contribution for the obligation to manage them. – Iwi/Hapū

A few other submitters said some of the policy suggestions threatened the rangatiratanga of Māori landowners to restore their land to its natural state, through managed regenerating permanent forestry or other approaches.

Waste

Key themes and messages

Most submitters supported the proposals for limiting emissions from landfills. Many submitters also suggested alternative regulatory and non-regulatory interventions ranging from total bans on food waste going to landfills, to education and behaviour-change campaigns to support households and businesses better manage waste. In general, alternative suggestions had less exceptions and faster timeframes than those in the discussion document. The most common additional proposals to reduce waste from landfills included reducing consumption, investing in infrastructure to divert waste, and incentivising behaviour change (eg, rewards for households with minimal waste, increasing the waste levy or fines for incorrectly sorting recycling).

As noted in section 13, 'Research, science and innovation', some industry submitters opposed the focus on diverting waste from landfill. They noted that per capita emissions from solid waste disposal had fallen over the past 20 years and landfills would remain part of the solution to waste for many years to come.

> 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. – Industry body

While the focus of the discussion document was on organic waste, many submitters commented on waste more broadly. A consistent theme across all questions was that more focus was needed on avoiding the creation of all kinds of waste. Policies to capture landfill gases (LFGs) were seen as being less important and potentially distracting from waste avoidance.

> Make compost, regenerate soil, and keep it local. 4% of NZ's emissions are from organic materials decomposing in landfills – things like food and garden waste, timber, natural fibre textiles, paper & cardboard and more. Stopping waste being generated in the first place, and making sure the rest gets reused, composted or recycled instead of going to landfill are the best ways to reduce these emissions - building expensive and inefficient gas capture systems is not the way (although some may be needed to deal with what's already in the ground). – Individual

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 282 submissions (including at least 82 organisations) from emails and Citizen Space.

Biogenic methane target

Support for specific proposals

87 per cent of 170 Citizen Space submitters supported the Commission's increased target to reduce waste biogenic methane emissions by 40 per cent by 2035. (Question 89)

Most submitters supported the proposed target to reduce waste biogenic methane emissions by 40 per cent by 2035. However, many submitters (including supporters of a target) said the proposed target and the timeframe were not ambitious enough.

Many submitters focused on reducing household organic waste. This was seen as a tangible target that would directly reduce methane emissions. These submitters also proposed additional targets such as a reduction in organic waste disposal, a separate organics collection target, and a food-waste prevention target consistent with United Nations Sustainable Development Goal 12.3.

Of the submitters who partially agreed with the proposed target, the most common reason was that it was not ambitious enough. Another common criticism (among all types of submitters) was that the discussion document did not provide sufficient detail about how the target would be met and what technology changes would be required.

Education and behaviour change

Support for specific proposals

95 per cent of 179 Citizen Space submitters supported more funding for education and behaviour-change initiatives to help households, communities and businesses reduce their organic waste (eg, food, cardboard, timber). (Question 90)

There was very strong support for education and behaviour change. Lack of consumer knowledge about how to manage waste and the resulting impacts was considered a key barrier to reducing household waste.

There was little comment on construction and demolition waste, but a few businesses suggested requiring segregation of waste material at construction sites with a supporting education programme.

Across all submitters, there were few dissenting views. However, one common critique was that greater focus should be on 'upstream' manufacturers and producers rather than consumers. This is discussed in greater detail in section 14, 'Circular (+Bio) Economy'.

> There are substantial benefits to [education and behaviour change] if done well. However, education and behaviour change must be backed up by investment and regulation at the top of the waste hierarchy and supply chain. We need to incentivise producers of food and organic waste to adopt and change practices that prevent waste at source – reducing food waste at the retail and consumer level is a step down both the hierarchy and supply chain. – Individual

Some submitters also said the Government should prioritise creating infrastructure to manage household and business waste, such as upgrades to recycling facilities or kerbside collection of organic waste (where this does not already occur). Some of these submitters suggested that this should be prioritised over education and behaviour change.

Other initiatives to support households and businesses manage impacts of increased disposal costs

The most common themes were waste avoidance and measures to reduce overall consumption as the best ways to offset increased waste disposal costs. Many submitters wanted policies that would facilitate (or mandate) circular economy principles and product stewardship. Here are some proposals from local government submissions:

- Policy should focus on before-market placement responses, such as front-end levies, eco-modulated fees, environmental taxes.
- Include all disposal sites (or at least all that received organic material) within the NZ ETS to avoid diverting waste to landfills that were excluded from the scheme.
- Support waste-management site plans in the building industry.
- Improve rural services, including by installing recycling sorting and transfer stations near rural schools.

Additionally, a few submitters suggested using funds from the waste levy to invest in a range of waste-minimisation initiatives and infrastructure (eg, funding kerbside collection and installing LFG systems), making circulars (junk mail) an opt-in service only, and measures to reduce waste from textiles (including to increase reuse, resale, repair and repurpose used clothing and textiles).

Ban on food waste from landfills unsuitable for LFG capture

Support for specific proposals

86 per cent of 183 Citizen Space submitters supported 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 are alternative ways to recycle this waste instead. (Question 92)

Most submitters supported the proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, although some submitters wanted support provided to businesses. A few submitters suggested distance-to-facility exemptions (eg, the ban or mandate applied only if an organics processing facility was within 100km). Exemptions would minimise illegal dumping or additional emissions from transporting food waste.

There were mixed views on whether suitable infrastructure was already in place. Local government and organisations were more likely to highlight the lack of supporting infrastructure than individuals.

Few submitters discussed possible alternatives to sending food waste to landfill, but bio-digesters were the most discussed.

> [We] are supportive of this approach on the basis there are viable alternatives. There needs to be a provision of service and alternative methods of reuse, composting or disposal which does not increase fly-tipping and other forms of illegal dumping. Services need to be available in both rural and urban environments and there needs to be continuity of service (avoiding suspension of kerb-side services as has happened in some locations during COVID lockdowns). – Local government

Some submitters only partially agreed with the proposal to ban food waste from landfills by 2030 because it was too late, it removed the focus from reducing consumption (contingent on alternative ways to recycle this waste), or it would be too difficult to monitor or enforce.

Ban on all organic waste from landfills

Support for specific proposals

86 per cent of 183 Citizen Space submitters supported a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas. (Question 93)

Most submitters supported the proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas. Many submitters made their support conditional on alternative ways to manage this waste being available.

The most common reason to oppose the ban was the lack of facilities (eg, collection systems, processing infrastructure and landfills with landfill gas capture). Submitters were concerned that the lack of facilities would result in illegal dumping or increase overall emissions due to increased transport of waste. These concerns were also shared by many submitters who supported the ban.

A few submitters said bans were ineffective policy tools and suggested disposal levy rates instead.

Compulsory LFG capture systems

Support for specific proposals

91 per cent of 169 Citizen Space submitters supported a requirement to install landfill gas (LFG) capture systems at suitable landfill sites. (Question 94)

Most submitters supported a requirement to install LFG capture systems at suitable landfill sites, although with conditions. Some sought clarity on how existing landfills would be retrofitted. Others were concerned that the requirement could distract from or minimise the importance of diverting waste from landfills.

Some opposed the requirement out of concern that capturing LFG for energy generation could incentivise or create demand for waste. Others stated that it would be impractical to retrofit existing landfills with LFG capture systems.

Standardised approach to waste collection

Support for specific proposals

94 per cent of 176 Citizen Space submitters supported 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. (Question 95)

Most submitters supported a more standardised approach to collection systems for households and businesses. A common theme among supporters was the need for a clear understanding of what could and could not be recycled and what constituted organic waste.

Submitters said 'different approaches across the country were a source of frustration'; however, others were concerned a national approach might be constrained by collection and processing infrastructure in small or rural areas. Submitters again wanted a stronger focus on diverting waste at source and product stewardship. Of those who opposed a more standardised approach, common arguments included: focusing instead on product stewardship, the inherent complexity of recycling systems and the need to maintain local autonomy.

Local government submitters held mixed views. There was support for a more standardised approach to how households manage their waste, but also recognition that local circumstances needed to be accounted for.

> A standardised approach would allow better national education, more consistency and less confusion for householders. The same standard collection at work, public places and at home nationally would improve waste behaviour results. – Local government

> We note that decisions regarding source separation or commingled divertible materials are best made locally and will differ due to scale, processing capacity and transportation logistics. – Local government

Support for specific proposals

91 per cent of 176 Citizen Space submitters agreed transfer stations should be required to separate and recycle materials, rather than sending them to landfill. (Question 96)

There was strong support for the role transfer stations play in diverting waste from landfill and therefore supporting the principles of a circular economy. A common theme among all types of submitters was that Government intervention was needed to address the current lack of incentives and infrastructure to support greater use of transfer stations.

> 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. – Local government

Few submitters dissented, but a common reason among those who did was that waste and recycling should be sorted at the household or business level.

Farm dumps

Support for specific proposals

88 per cent of 159 Citizen Space submitters agreed the proposals outlined in the discussion document should also extend to farm dumps. (Question 97)

Most submitters supported extending the proposals to farm dumps. However, many submitters raised challenges due to a lack of information on farm dumps and the high costs of enforcing regulations. With farm dumps currently managed by regional councils under the Resource Management Act, some submitters suggested these councils were best placed to manage any new regulatory role.

The two primary reasons for opposing extending the proposal to farm dumps came from different perspectives. One argued there were no alternatives available in rural areas and the focus should be on providing better services in these areas. The other view held that farm dumps should be discontinued and not permitted under new regulations.

A few submitters discussed the risk of creating perverse incentives, for example a regulatory approach could result in farmers 'hiding' or underreporting their use of farm dumps. One submitter suggested an 'amnesty' was needed to help farmers manage their existing farm dumps.

> There needs to be an amnesty to locate all the on-farm dumps to get a real feel for the size of the problem. Then work with farmers to get a national waste collection service operational so that waste can be dealt with in a proper fashion rather than it being hidden on farms. – Community/NGO

F-gases

Key themes and messages

Most submitters, including industry, supported reducing the use of F-gases in Aotearoa. Support from industry, however, was conditional on the phase-out of F-gases being managed carefully and safely. This was consistent across the specific questions consulted on.

Industry considered F-gases that were better for the climate were generally more hazardous to human health and safety. Using climate-friendlier F-gases, therefore, meant accepting a higher risk to human life. This risk needed to be managed by the Government through support and incentives for training and tighter regulations in the refrigeration industry. A shortage in skills and expertise compounded this risk. This meant industry was more supportive of existing international timelines, with several industry associations opposing accelerated phase-down.

Many submitters also raised concern about the upfront cost of phasing out F-gases due to existing equipment and the higher upfront cost of more climate-friendly F-gases or alternatives such as natural refrigerants.

Specific questions

In addition to general comments on this theme, the specific questions in this section of the discussion document received at least 106 submissions (including at least 36 organisations) from emails and Citizen Space.

Phasing down HFCs faster than the existing Kigali Amendment timetable

Support for specific proposals

86 per cent of 69 Citizen Space submitters agreed it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable. (Question 100)

Overall, most submitters supported phasing down bulk imports of hydrofluorocarbons (HFCs) more quickly than the existing international timetable agreed through the Kigali Amendment.[6] Much of this support was based on the need for more urgent climate action across all sectors.

> We see no strategic advantage in accelerating the phase-down of the bulk import of HFCs. Most of the bulk HFC imports are used for servicing existing equipment, accordingly, accelerating the phase-down would need to be done in tandem with mandating the early retirement of HFC equipment. – Industry body

Industry submissions supported a phase-down of bulk import of HFCs in general, recognising this was necessary. However, some industry submissions opposed accelerating the Kigali Amendment timeline for the HFCs already within its scope. Some stated the existing Kigali Amendment timeline would be challenging to meet. Concerns included: whether it was feasible for older equipment ('legacy systems') with 10–20 years of service remaining, maintaining existing systems (retrofitting was more environmentally positive than scrapping early), and transitioning safely (given HFC alternatives were more hazardous to human life).

Extending the scope of the existing phase-down to finished products

Most submitters said that extending the import phase-down to finished products would not impact on their business. It would provide a helpful, clear market signal on the direction of importing products containing HFCs. Some businesses that supplied natural refrigerants said it would force the market, which has been slow to take up alternatives, to adapt and support local manufacturers.

Some submissions, especially from businesses using large-scale refrigeration, said the current timeframe (up to 2032) was already too short. They said there were not enough manufacturers in Aotearoa, causing some businesses to retrofit assets until sufficient new assets were available. Shortening the timeframe would exacerbate this issue.

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[6] The phase-down schedule for Aotearoa New Zealand includes stepped reductions of 90 per cent of base line by 2029; 70 per cent by 2035; 50 per cent by 2039; and 20 per cent by 2045.

> Consideration will need to be made for the continued importation of refrigerant and spare parts for prohibited systems, otherwise there will be the risk of unintended consequence of increased emissions because of declining maintenance standards. – Business

Some submitters said there was a lack of alternatives to products using F-gases subject to the phase-out. Existing alternatives were not always appropriate to existing equipment. Most industry submitters, therefore, said that existing government policy was adequate.

When asked about phase-down where alternatives were available, most submitters supported restrictions being imposed immediately. Some submitters agreed with the caveat that it be accompanied by Government support or adequate lead-in time. Many industry submissions opposed additional restrictions, raising concerns over safety and a lack of knowledge around alternatives. Industry strongly recommended that Government consult with experts on the safety and efficacy of alternatives and consult with industry every three years for review and update.

A few submissions suggested the transition would be more economic were Aotearoa to transition in line with global (or regional) timelines. If the country was not aligned with international standards, this would raise the cost.

Using refrigerants with lower global warming potential in existing equipment

Most individual submitters supported this proposal while most industry submissions opposed it on safety grounds. Industry emphasised the significantly higher risks involved with climate-friendlier refrigerants especially when used in existing equipment. This was compounded by a lack of skilled tradespeople or experts who understand the engineering involved, especially in terms of retrofitting. A few submissions cited the Tamahere coolstore fire of 2008, which was caused by propane refrigerant leaks and resulted in the death of one firefighter and significant injuries to others. Industry therefore encouraged further investigation and consultation with experts.

> Yes, subject to an adequately trained and skilled industry tradesmen being available to support the alternative products. The alternative products will have safety issues (flammable) necessitating skilled installers and service. To practically address climate issues, it will be necessary for societal acceptance of an increased hazard environment. – Industry body

There were varied views on the use of alternatives. Many submitters supported using alternatives to HFC refrigerants. Many submitters saw benefits from manufacturing natural or alternative refrigerants domestically. Many submitters also opposed alternatives, related to safety and increase likelihood of leakage. Some submitters considered Aotearoa had limited ability to influence manufacturers' choice of refrigerant and there were significant barriers to using alternatives to HFCs.

Reducing refrigerant emissions in combination with other aspects of heating and cooling design

Most responses raised construction and design techniques as ways to improve energy efficiency (eg, passive design, net-zero building movement). Many submitters proposed increased thermal efficiency to reduce the amount of both cooling and heating necessary. Specific suggestions included:

- establishing higher mandatory thermal standards, smaller spatial and carbon footprints, and encouraging smaller or more efficient appliances

- banning disposable cylinders (in line with practice in other countries)
- supporting better refrigeration management practice, and the standardisation and strengthening of regulations
- regulating access to refrigerants (industry wanted access restricted to only trained and skilled tradespeople), efficiency inspections for equipment for maintenance, leak detection and prevention
- standardising proper end-of-life disposal of refrigerants, and educating the workforce on this
- adopting European Union regulations and reporting requirements on use of refrigerants.

Annex A: 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 above, the correct ones? Please explain why or why not.
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?
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?
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?
7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

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 whānau, 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 whānau 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?
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?

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?

Other actions

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?
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?
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?

Funding and financing

24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?
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 low-emissions investment and activity?
27. Is there anything else you wish to share in relation to funding and financing?

Emissions pricing

28. Do you have sufficient information on future emissions price paths to inform your investment decisions?
29. What emissions price are you factoring into your investment decisions?
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?
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?

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.
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?
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?
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?
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?

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?

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

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?

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

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?

Transitioning key sectors

Transport

We are proposing **four new transport targets** in the emissions reduction plan, and are seeking your feedback.

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?

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?

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

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?

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

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?

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

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?

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?

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?

65. 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?

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 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?

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?

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?

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?

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?

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?

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?

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?

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?

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?

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?

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? 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?

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?

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. 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 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?

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?

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?

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, NZ ETS and investment?

    b) the private sector in influencing the location and scale of afforestation? Please provide reasons for your answer. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

112. From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?

113. Are there any other views you wish to share in relation to forestry?

Annex B: Specific proposals

This annex provides the level of support for the specific proposals in the discussion document, drawn from the submissions to the Citizen Space platform. These figures do not include indications of support made via email. Email submissions, including levels of support are, however, reflected in the analysis in the body of the report.

Question 1: Do you agree that the emissions reduction plan should be guided by a set of principles?		
Yes	246	89%
No	29	11%
Total answered	275	

Question 13: Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission?		
Yes	148	84%
No	29	16%
Total answered	177	

Question 28: Do you have sufficient information on future emissions price paths to inform your investment decisions?		
Yes	53	45%
No	65	55%
Total answered	118	

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?		
Yes	135	94%
No	8	6%
Total answered	143	

Question 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	124	73%
No	47	27%
Total answered	171	

Question 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	119	71%

No	48	29%
Total answered	167	

Question 54: Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?		
Yes	125	78%
No	36	22%
Total answered	161	

Question 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	117	75%
No	38	25%
Total answered	155	

Question 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	114	83%
No	24	17%
Total answered	138	

Question 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	87	93%
No	7	7%
Total answered	94	

Question 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?		
Yes	37	58%
No	27	42%
Total answered	64	

Question 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?		
Yes	56	65%
No	30	35%

Total answered	86	

Question 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)?		
Yes	89	94%
No	6	6%
Total answered	95	

Question 89: The Climate Change 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	148	87%
No	22	13%
Total answered	170	

Question 90: Do you support more funding for education and behaviour-change initiatives to help households, communities and businesses reduce their organic waste (eg, food, cardboard, timber)?		
Yes	170	95%
No	9	5%
Total answered	179	

Question 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	157	86%
No	26	14%
Total answered	183	

Question 93: Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?		
Yes	157	88%
No	21	12%
Total answered	178	

Question 94: Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?		
Yes	153	91%
No	16	9%
Total answered	169	

Question 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	165	94%
No	11	6%
Total answered	176	

Question 96: Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?		
Yes	161	91%
No	15	9%
Total answered	176	

Question 97: Do you think the proposals outlined in this document should also extend to farm dumps?		
Yes	140	88%
No	19	12%
Total answered	159	

Question 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	59	86%
No	10	14%
Total answered	69	

Question 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?		
Yes	108	62%
No	65	38%
Total answered	173	

Question 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	126	84%
No	24	16%
Total answered	150	

Annex C: Template from Forest & Bird

Submitters using this template were able to add a personal comment at the bottom.

From: Forest and Bird <naturesvoice@forestandbird.org.nz>
Sent: Saturday, 20 November 2021 7:38 am
To: Jacinda.Ardern@parliament.govt.nz; climate consultation 2021 <climateconsultation2021@mfe.govt.nz>
Cc: [Removed]
Subject: Submission on the Emissions Reduction Plan

Submitted on Sat 20 Nov 2021

Submission on the Emissions Reduction Plan

To Prime Minister Jacinda Ardern,

I feel frustrated. You have called climate change your generation's 'nuclear-free moment', but the Government's document about an Emissions Reduction Plan to tackle climate change has huge holes in it.

The Government has said nature-based solutions are a priority but doesn't seem to know what they are.

Our forests are vital carbon sinks, as well as home to many thousands of unique native species, but they are being destroyed by browsing mammals. Please champion an all-of-government plan to urgently expand browsing pest control including for feral deer, pigs, and goats.

There are other important nature-based ways to protect our climate too. The forests, waterways, and oceans of Aotearoa 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 nature at the heart of New Zealand's climate response:

- **Expand browsing animal and browisng 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 on all public land.
- **Protect and restore existing carbon sinks:** The huge amount of carbon stored in our forest, wetland, and ocean habitats should be safeguarded by policies including an end to bottom trawling, mangroves protection, rewetting peatlands, and banning all future wetland destruction.
- **Incentivise native habitat restoration:** Support should be offered to 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.
- **Put agricultural in the Emissions Trading Scheme:** New Zealand's largest source of emissions needs strong incentives to act on climate change. Reduced irrigation and fertiliser use, smaller herd sizes, and the retirement of marginal land will also help clean up our rivers and protect communities from floods.
- **Stop new coal mines:** 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.

First name
[Removed]
Last name
[Removed]
Email
[Removed]
Cellphone
[Removed]
Your personal comments are important. Please expand on why you think we need urgent climate action:
[Removed]

Annex D: Template from the Green Party

Submitters using this template were able to edit each section to add or remove material.

From: Green Party of Aotearoa New Zealand <noreply@123formbuilder.com>
Sent: Friday, 12 November 2021 8:52 am
To: climate consultation 2021 <climateconsultation2021@mfe.govt.nz>
Subject: [Name] supports the Emissions Reduction Plan!

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

Kia ora,

I would like to make the following submission to the Emissions Reduction Plan consultation.

My details	
Firstname	[Removed]
Lastname	[Removed]
Email	[Removed]
Phone number	
	Agriculture is responsible for almost half of all climate pollution in Aotearoa and so the Government needs to work with farmers to reduce their impact on the climate. That means doing things like: a. Supporting farmers to adopt regenerative farming practices that restore soil, water, and air quality, including funding to help them do this. b. Phasing out the use of synthetic nitrogen fertiliser, which has fuelled the growth in dairy cow numbers over the past three decades. c. 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.
	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. The Government should: a. Invest in safe walking and cycling, especially near schools. b. Reduce public transport fares, including making buses and trains free for children and students. c. Build light rail in all our major cities. d. Upgrade the trains between cities so people have a real alternative to flying. e. Encourage people to trade in their old, polluting cars to receive discounts on new electric cars, e-bikes, or public transport passes. f. Stop importing petrol cars into New Zealand around 2030, once electric cars are affordable for everyone. g. Invest in freight rail and clean coastal shipping to get big trucks off our roads. h. Stop investing in new urban motorways.
	Aotearoa is blessed with an abundance of clean energy potential, and we need to embrace it so we can stop burning fossil fuels. The Government should: a. Urgently end all coal use for industry and electricity generation. b. Change the rules and provide incentives for people to install solar panels and batteries in their homes. c. Put solar panels on all state homes. d. 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. e. Stop allowing new fossil gas connections in 2025. f. Work with households and businesses on energy conservation and efficiency, so we use less energy overall. g. Ban all new fossil fuel electricity generation, including fossil gas, and build wind and solar instead. h. 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 Housing to consider, promote and inform the general public about the possibility of building new houses with NATURAL MATERIAL, such as earth. There is a full Building code that covers this kind of construction that has low embodied energy and is a great way of reducing construction waste and the building cost. This is the way to go for reducing emissions due to the construction industry and also can solve the housing problem. I think the Government should consider building housing with these techniques and engage in projects where the owners can become fully or partially (depending on the skills) owner builders.

I would like the Minister of Energy and Resources to urgently end all coal use in Aotearoa, and set a plan to end the use of fossil gas including no new gas connections after 2025. We need to encourage clean energy like wind, solar, and hydro instead. The Government should lead the way by making all schools, hospitals, and other government buildings, 100% powered by clean energy by 2025.

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 invest in light rail in our major cities and faster trains between cities so people have an alternative to flying. The Minister of Transport should set a date for the end of importing new fossil fuel cars into Aotearoa, once electric cars are more affordable. And 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 of Agriculture to work with farmers to phase out the use of synthetic nitrogen fertiliser that has been an important factor underlying increased dairying. I would like the Minister to support organic farmers and regenerative farming so we can continue producing high-quality food in a climate-friendly way.

I would like the Minister for the Environment to make new rules to reduce unnecessary product packaging, especially plastic packaging, so we can reduce the amount that ends up in landfills. I would like the Government to reduce the amount of food waste that ends up in landfills, for example by working with community groups to redistribute food before it goes off.

I would like the Minister of Forestry to prioritise restoring and expanding our native forests, not just planting lots of pine trees.
I would like the Minister of Finance to direct all large public investment funds – like the ACC Fund and the Super Fund – to stop investing in fossil fuels and other activities that cause climate change.

To honour te Tiriti o 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 Māori 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.

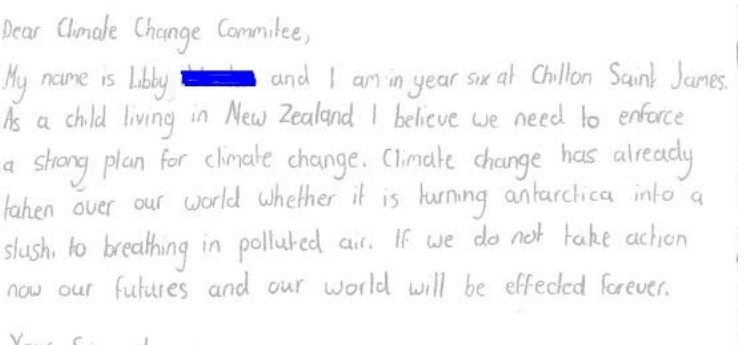
We need to ensure Māori representation on relevant governing bodies such as on boards, commissions, and councils. These entities should utilise a partnership model in their operation. This representation should be genuine and should not, for example, fall onto whoever present happens to have Māori whakapapa.
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.

	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.
	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.

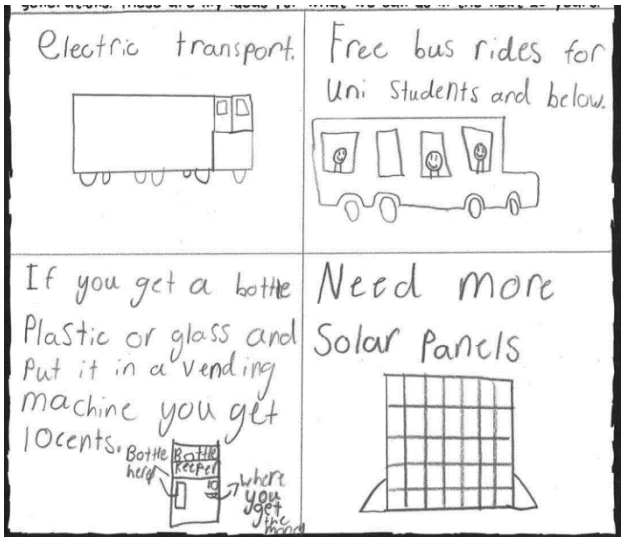
Annex E: Children's illustrations

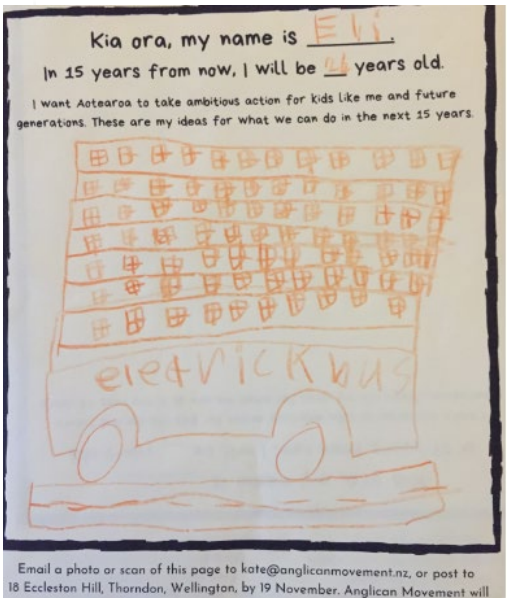
This annex includes a sample of illustrations submitted by children as part of the Anglican Movement.

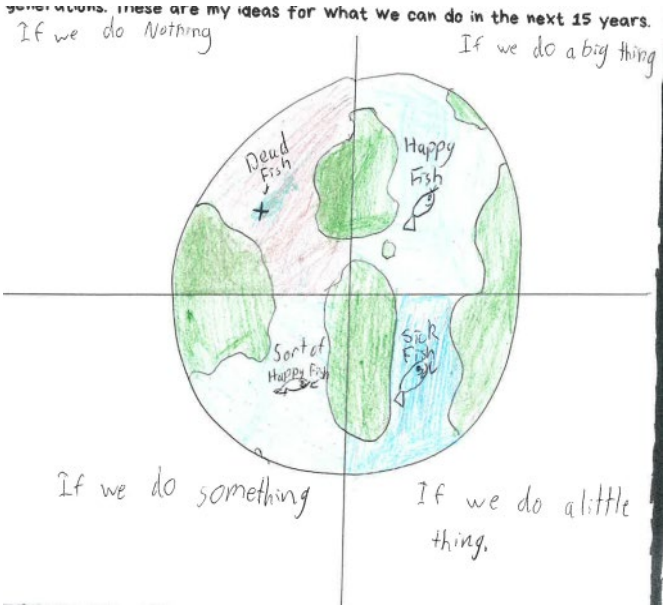

Dear Climate Change Commitee,

My name is Libby [redacted] and I am in year six at Chilton Saint James. As a child living in New Zealand I believe we need to enforce a strong plan for climate change. Climate change has already taken over our world whether it is turning antarctica into a slush, to breathing in polluted air. If we do not take action now our futures and our world will be effected forever.

Your Sincerely,







Glossary

This glossary is drawn from the discussion document. A definition of the precautionary principle has been added.

Term	Definition
2050 target	Net-zero emissions of all greenhouse gases (except biogenic methane) and biogenic methane emissions reductions of 24–47 per cent below 2017 levels
Abatement	Efforts to reduce or remove emissions
Active travel	Walking, cycling and other non-motorised forms of travel
Adaptation	Efforts to respond to a changing climate
Anaerobic digestion	The process of breaking down organic material in the absence of oxygen; used to manage waste or to produce fuels
Bioenergy	Renewable energy produced by living organisms
Biofuel	Fuel produced from plant or animal waste
Biogenic methane	Biogenic methane is made in different ways by natural processes involving plants and animals. As a greenhouse gas, methane is 25 times more potent than CO_2 and dominates emissions from waste and agriculture. Human activities create additional methane emissions that otherwise would not have occurred naturally (such as through decomposition of organic waste in landfills). Biogenic methane emissions from agriculture and waste make up 41 per cent of our gross emissions (agriculture 91 per cent, waste 9 per cent).
Carbon sequestration/ sink	Any reservoir, natural or otherwise, that absorbs more carbon than it releases, thereby lowering the concentration of CO_2 in the atmosphere, eg, vegetation, forests, peatland and the ocean
CCRA	Climate Change Response Act 2002
Circular economy	An economic system based on designing out waste and pollution, reusing products and materials, and regenerating natural systems
Cleantech	Clean technology – refers to a wide range of environmentally friendly practices and technology
Climate Change Commission (the Commission)	A Crown entity that gives independent, evidence-based advice to the Government, to help Aotearoa move to a climate-resilient, low-emissions future
Climate Change Response (Zero Carbon) Amendment Act	This Act sets a framework for emissions targets: reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050; and reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent. Used to describe and compare different types of greenhouse gases, by comparing their warming potential to that of CO_2

Term	Definition
Cost containment reserve (CCR)	The CCR is a reserve volume of units available to be released to the NZ ETS market if the CCR trigger price is hit at auction
Decarbonise	Reduce CO_2 emissions using low-carbon power sources
Distributional impacts	The effects of environmental policies (for example, higher transport or energy costs) across households, iwi/Māori, businesses, communities and regions. Some groups may pay more or receive fewer benefits from the policies
Embodied emissions	For construction materials or products, this is the amount of carbon emissions released throughout their supply chains. This includes raw material extraction and transportation, manufacturing processes, construction site activities and material losses, repair, maintenance and replacement, as well as the end-of-life processing. For a building, the embodied carbon is the sum of the embodied carbon of all the constituent materials or products within the building.
Emissions budget	The cumulative amount of greenhouse gases that can be emitted over a certain period. Aotearoa legislation requires three budgets to be in place at any given time.
Emissions	Greenhouse gases, especially CO_2, released into the atmosphere, where they trap heat or radiation
Emissions reduction plan	A pathway towards the 2050 emissions target, with policies and strategies to reduce and remove emissions, to meet each emissions budget
F-gases	Fluorinated gases, mainly used as refrigerants for heating and cooling
Fossil fuels	Fuels such as coal, fossil gas and LPG, that release greenhouse gases and have potential health risks
Fossil gas	Commonly known as natural gas. The term 'fossil gas' is used to distinguish methane from the lithosphere (under the ocean floor or on land) from methane from the biosphere (animal and biological waste). See biogenic methane
Fugitive emissions	Leaks of gases or vapours from containers (eg, appliances, storage tanks)
Global warming potential (GWP)	The GWP of a greenhouse gas is its ability to trap extra heat in the atmosphere over time, compared to CO_2. A common GWP scale allows us to compare the impact of emissions and reductions of different gases.
Greenhouse gases	Gases in the atmosphere that trap the sun's heat by preventing it from leaving the atmosphere. Common greenhouse gases include water vapour, CO_2, methane and nitrous oxide. Greenhouse gases covered by the CCRA are CO_2, methane, nitrous oxide, HFCs, perfluorocarbons and sulphur hexafluorides.
Hydrofluorocarbons (HFCs)	Manmade greenhouse gases, with high GWP, used in refrigeration, air conditioning and other processes
Hydrofluoroolefins	Alternative natural refrigerants with low GWP and zero ozone depletion potential
ICE	Internal combustion engine (eg, in vehicles), which uses petrol or diesel and emits CO_2
Kaitiakitanga	Stewardship, guardianship

Term	Definition
Kt CO_2e	Kilotonnes (thousand tonnes) CO_2e
LFG	Landfill gas, a by-product of decomposing organic waste in landfills, mainly composed of methane and CO_2
LFG capture	The process used at modern landfills to capture landfill gas, which is then used for energy or flared
LPG	Liquefied petroleum gas
Managed landfill	Class 1 or municipal solid waste landfill (classification used for our greenhouse gas inventory)
Mātauranga Māori	Māori knowledge and knowledge systems
Mitigation	Efforts to reduce or prevent emissions
Mode-shift	A change from one form of transportation to another (eg, from a car to a bike)
MRF	Materials recovery facility
Mt CO_2e	Megatonnes (million tonnes) CO_2e
Municipal landfill	A landfill that accepts household waste as well as other wastes. Classified as Class 1
NABERSNZ rating	An independent, government-backed system for rating the energy efficiency of office buildings
National Climate Change Risk Assessment (NCCRA)	In August 2020, the Government released the first National Climate Change Risk Assessment. This risk assessment highlighted risks covering all aspects of life from our ecosystems and communities to buildings and the financial system. The Government is now working on developing its response to the risks in the report, through the National Adaptation Plan. The Climate Change Commission will produce further national climate risk assessments at least every six years.
NDC	Nationally Determined Contribution (NDC). An NDC represents the contribution a party to the Paris Agreement will make to the global effort to reduce emissions (both domestically and internationally). Our first NDC is currently an economy-wide, absolute emissions reduction target to reduce greenhouse gas emissions by 30 per cent below 2005 levels by 2030.
Net zero	In Aotearoa this means completely negating the amount of greenhouse gases produced by human activity (except biogenic methane) by 2050. This can be done by balancing emissions and removals of greenhouse gases, or by eliminating emissions from society.
NZ ETS	New Zealand Emissions Trading Scheme is a key tool for meeting our domestic and international climate-change targets. It places a price on greenhouse gas emissions and requires all sectors of our economy, except agriculture, to pay for their emissions.
Operational emissions	Emissions from energy and other resources used when operating a building
Ozone	A gas that occurs high in the atmosphere, where it protects the earth's surface from harmful ultraviolet (UV) rays. Some greenhouse gases and human activity can deplete ozone and reduce its protective effect.

Term	Definition
Paris Agreement	A legally binding international treaty on climate-change mitigation, adaptation and finance, adopted by 196 parties in Paris and signed in 2016
Precautionary principle	A principle in modern environmental law that reflects that the environment needs to be protected and, where there is a threat or risk of serious damage a lack of scientific certainty should not be used to avoid taking action to prevent that damage
Product stewardship	A scheme in which a producer, importer, retailer or consumer takes responsibility for reducing a product's environmental impact
Rangatiratanga	Right to exercise authority and leadership, self-determination, ownership
Recovery	Reusing and recycling waste
Resilience	The ability to prepare for, and respond to hazards, risks and trends related to climate change
Rohe	District, region, territory
RMA	Resource Management Act 1991
Shared mobility	Transportation resources or services that are shared among users. This includes carpools, car sharing and shared micromobility.
Submission	Feedback and views from individuals or organisations on a proposal (eg, in a discussion document), which they send to the relevant Ministry
Takiwā	District, region, territory
Te ao Māori	The Māori world view, acknowledging the interconnectedness of all living and non-living things
Te Tiriti	Te Tiriti o Waitangi/the Treaty of Waitangi
MfE	The Ministry for the Environment
Waste disposal levy	A levy (fee) on waste sent to municipal (Class 1) landfills. Revenue from the levy is used for initiatives to reduce waste and encourage resource recovery. From 2021 this rate will progressively increase and from 2022 the levy will be expanded to apply to more landfill types.
Waste hierarchy	A pyramid framework ranking the preferred order of waste disposal, with preventing and reducing waste at the top, and sending to landfill at the bottom
Zero Carbon Framework	A legislated framework that includes tools to reduce our greenhouse gas emissions (targets, emissions budgets and emissions-reduction plans) and improve our climate resilience (national climate-change risk assessments and national adaptation plans)