

Chapter Summaries

CHAPTER 2 – EMPOWERING MĀORI

Key Successes from this Period



**Māori Climate Platform
Interim Ministerial
Advisory Committee
appointed**



**Work plan delivered
by the Interim
Ministerial Advisory
Committee**



4

Total actions (includes 1
completed action)



2

active actions



2

active funded
actions



1

inactive
unfunded action



Near the end of 2022 we reached a major milestone with the establishment of 10-person Interim Ministerial Advisory Committee for the Māori Climate Platform (Interim Committee). This was a robust process which was done in partnership with Māori, with the support of an independent Māori-led nominating panel. The announcement of the Interim Committee was well-received by the National Iwi Chairs Forum, demonstrating the benefits of early collaboration with Māori. The appointment process as well as the Interim Committee itself are both important steps in embedding partnership and representation into our climate policy response.

The Interim Committee met their first deliverable for a work plan outlining their approach to designing proposals for an enduring Māori Climate Platform. Their work plan focus areas include rangatahi engagement as well engagement about capability and capacity building for Māori communities to help them understand and respond to climate change.

Progress is also being made to coordinate and align key workstreams of high priority and impact to Māori across agencies. Cross-agency alignment is an important element of preparing for effective implementation of the Interim Committee’s proposals and will also help implementation of other actions, such as the equitable transition strategy work and working with nature actions. The Māori Climate Action Team are continuing to facilitate this cross-agency alignment, including by establishing regular director level and official level hui. These have a focus on information sharing, managing emerging risks and planning effective engagement to ensure we are upholding our Te Tiriti obligations to our partners.

CHAPTER 2 - EMPOWERING MĀORI

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Timeframes for the Interim Committee's delivery of proposals	Short-term risk. The Interim Committee's deadline to the Minister is currently 1 August 2023. With the delivery of a workplan there is now a clearer understanding of their objectives and approach, however there remains some logistical practicalities and details to work through. This may mean some adaptations have to be made to the workplan.	The Terms of Reference and regular communication with the Co-Chairs will be used to track progress, forecast problems and inform senior leadership that may delay delivery or compromise the quality of the proposals.
Lack of cross-agency communication and/or collaboration on workstreams intended to enable Māori or mitigate impacts to Māori	On-going risk. Currently there is little visibility across agencies of what Māori-related policy work is being developed or implemented. This includes engagement planning. Lack of cross-agency alignment increases the risk of duplication, a weak evidence base, and higher costs (time and money) for both Māori and the Crown.	Establishment of monthly cross-agency hui at both director and official level.
Opportunity	Description	Management Plan
Deepening established relationships with Māori	Ensuring the quality of the relationships with the Interim Committee and NICF is maintained or improved, and that the outcomes are mutually beneficial will help to ensure our Te Tiriti responsibilities are upheld across the climate policy response.	The Māori Climate Action Team will maintain current relationships and be open to opportunities that come from them.
Sharing the developments made by the Interim Ministerial Advisory Committee	The Interim Committee will conduct engagement and data gathering, and there is potential for information to be shared with us that may improve our policies.	The Māori Climate Action team maintain oversight of the Interim Committee's work programme and share information with other agencies where agreed with the Interim Committee.

CHAPTER 3 – EQUITABLE TRANSITION

Key Successes from this Period



Equitable Transitions Strategy Terms of Reference (TOR) and overall delivery approach confirmed by Cabinet



15 Regional Workforce Plans published



Southland's Just Transition Work Plan published



Study estimating the impacts of the Winter Energy Payment on household's energy expenditure, health and wellbeing, and receipt of hardship assistance published



Commenced development of a novel prototype to track in real-time the impacts of the transition to low-emissions society



12

Total actions



12

active actions



8

active funded actions



4

active unfunded actions



The development of an Equitable Transitions Strategy is progressing well.

The development of the Strategy is co-led by MBIE and MSD with support from MoE and MoT. Following Cabinet's agreement to the Strategy's TOR in October, these agencies established an interagency Governance Group and project team, and commenced a public engagement process including an online survey and series of targeted stakeholder engagement meetings. In Q1 2023 a series of around 40 workshops will be held around the motu, largely in person. These will focus on canvassing views that are less likely to have been captured in the engagement that informed the development of the ERP.

There has been progress made across a range of actions that build upon existing work programmes.

A Just Transition work programme for Southland was agreed, significant progress has been made across the suite of Industry Transformation Plans, and Regional Leadership Groups (RLGs) have been strengthened and are becoming an established function for local leadership and community voice. In 2022, each of the 15 Regional Skills Leadership Groups (RSLGs) published a Regional Workforce Plan largely focused on regional solutions to regional workforce and skills challenges. A cross-agency response to these plans, led by MBIE, will be provided by in February 2023 and the implementation of actions in the Regional Workforce Plans is underway.

Actions to equip people with the skills needed for the transition and to create more responsive and flexible education and training system are also progressing well, however, decisions around finalising Te Pūkenga's business case are still to be made by Government.

The Equitable Transitions chapter commits to support people to manage challenges and embrace opportunities so that our transition to a low emissions future is just, fair and inclusive. Following the publication of the ERP, inflation has climbed to its highest level since 1990 with significant cost of living increases. This context has strengthened the importance of an equitable transition that avoids compounding existing disadvantages and challenges that many parts of Aotearoa are already grappling with.

CHAPTER 3 – EQUITABLE TRANSITION

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Risk & Barriers	Description	Management Plan
Status of tertiary education action	The RAG status of Action 3.1.2 'Create an accessible, responsive and flexible tertiary education and training system' is currently Amber . This is because Te Pūkenga is still to make key decisions on their operating model and Government is still to make decisions around Te Pūkenga's business case.	The TEC and RoVE programme Board have monitoring oversight of Te Pūkenga. The Minister for Education is providing a letter of expectation to Te Pūkenga to guide prioritisation of their activities. The Ministry, TEC and Treasury are providing advice to Ministers on the business case.
Informed public participation	The Chapter includes a suite of actions to investigate options to enhance informed public participation in climate policy. While this work is currently on track, further progress is contingent on Budget 2023 decisions.	s 9(2)(f)(iv)
Actions to support an equitable transition cut across multiple agencies and portfolios	While MBIE and MSD are jointly accountable for developing the Equitable Transitions Strategy, the policy levers needed to deliver on an equitable transition sit across multiple agencies and portfolios. Accordingly, the success of the Strategy is contingent on all agencies assessing the impacts of their emissions abatement policies and where necessary committing to developing and implementing complementary policies to manage impacts and seize opportunities.	MoE and MoT are formally included in the Governance arrangements for the Equitable Transitions Strategy. In agreeing to the Terms of Reference for the Strategy, Cabinet directed agencies to work with MSD and MBIE to support a consistent and coherent approach to delivering an equitable transition including by providing information on how distributional impacts are being factored into agencies' climate strategies and policies.
Funding an equitable transition	Work is progressing well to develop the Equitable Transitions Strategy. However, it is the actions that the Strategy proposes that will actually manage impacts for people and communities. New actions to address distributional impacts are likely to require additional resourcing. This will likely involve trade-offs among the different objectives that Ministers have for CERF revenue. For example, additional actions to address distributional impacts may result in fewer options to fund complementary measures to drive emissions abatement or to support adaptation objectives.	Equitable transition objectives are included as part of the CERF assessment criteria. Officials will need to provide advice around how to manage trade-offs across the suite of different climate change policies.
Opportunity	Description	Management Plan
ERP Action 3.4: Develop monitoring framework for distributional impacts of low-emissions transition	As part of the work to develop the Equitable Transitions Strategy, MBIE and MSD are developing a tool for monitoring the distributional impacts of New Zealand's transition to a low emissions economy and society. It is envisaged that the tool will be used to identify adverse impacts from the transition on people and communities, with a view to informing timely government responses. This work will include the development of guidance on the steps and processes that policy makers should take, ex-ante, to identify and mitigate distributional impacts as part of the policy design process. This advice will present an opportunity for agencies across Government (and local government, NGOs and iwi) to better track and manage the impacts of the transition.	The work will be informed through targeted interviews with experts and with non-government end-users to ensure that it is practical and able to meet the needs of diverse users.
ERP Action 3.2.1: Develop an Equitable Transitions Strategy	Managing the impacts of the transition is a challenge that cuts across multiple portfolios and requires all agencies to be developing appropriate measures to equitably manage the impacts of the transition. The Equitable Transitions Strategy is an opportunity to create a more cohesive, coherent and consistent approach to this work.	MBIE and MSD, with support from MoE and MoT, are developing a framework that sets out how agencies should think about impacts and that provides guidance on the types of interventions that might be appropriate for different types of challenges. This will be workshopped with staff across government agencies before being tested more widely as part of the public engagement to inform the Equitable Transitions Strategy.
Action 3.1.2: Create an accessible, responsive and flexible tertiary education and training system	MoE will work with tertiary education organisations, education unions and Workforce Development Councils to identify the conditions needed to ensure the tertiary education system is able to adapt and respond to changing skill needs during the transition to a low emission economy. This includes how the education system responds to specific sectoral/regional skill needs and education pathways by Māori for Māori.	This work will be informed through engagement with industry, businesses, and workers to understand the barriers to accessing lifelong learning and the type of support needed to participate.

CHAPTER FOUR - WORKING WITH NATURE

Key Successes from this Period



National Adaptation Plan prioritises use of nature-based solutions



Drawing on the ERP, some Local Government plans are starting to explicitly address climate and biodiversity together



CNGP offsetting project will consider prioritising nature-based solutions

PM Ardern priority areas:
Nature based solutions



13

Total actions (includes 5 inactive actions)



8

active actions



4

active funded actions



4

active unfunded actions



The ERP makes a commitment that climate policy, planning and regulation should protect, enhance and restore nature, and any impacts on nature should be mitigated as much as possible. This chapter focuses on nature-based solutions (NbS), with a particular focus on native forests due to their comparatively significant potential for improving mitigation, adaptation and biodiversity outcomes. Promoting NbS to better align climate and biodiversity policy is being actively considered in multiple workstreams across the public sector. This has yet to flow through into policy decisions or concrete actions. For example:

- Waka Kotahi and MOT are considering how NbS will be used in transport and infrastructure development (Action 10.1.5).
- [s 9\(2\)\(f\)\(iv\)](#)
- The ETS review and the development of a sequestration strategy will consider how native sequestration will be rewarded.

A key challenge is that exotic trees sequester carbon faster in the short to medium term than natives (which sequester more over the long term). Any system which only encourages shorter term and lower cost sequestration will promote large scale exotic afforestation rather than the restoration and planting of native forests. Even with governmental support to reduce costs of natives and assist landowners, current financial incentives inherent in ETS price settings are likely to limit the impact of those interventions.

Though a target for the amount of native sequestration has not been set; it is clear that current policy settings will not deliver the Climate Commission's suggested pathway of 300,000 hectares of new native forests by 2035.

A related issue is that management interventions in native forests (e.g., pest control) and sequestration from non-forest vegetation (e.g., wetlands, peatlands) do not currently count towards New Zealand's climate targets and are not encouraged by our climate policy settings.

Research into measuring carbon sequestration, through the CERF-funded, Maximising Carbon Storage Programme, is underway. The extent to which this research will enable international recognition of sequestration from New Zealand's native ecosystems or management interventions is still being worked through.

CHAPTER FOUR – WORKING WITH NATURE

Risk & Barriers	Description	Management Plan
<p>Lack of a coordinated approach to aligning climate and biodiversity across different workstreams</p>	<p>Ongoing risk of maladaptation due to this chapter having high dependencies and overlap with other chapters (e.g., emissions pricing and forestry). For example, renewable energy production can reduce emissions but it can also harm adjacent native ecosystems.</p>	<p>Ongoing operation of the ERP Integrated Work Programme.</p> <p>Establishing interagency working group on NbS.</p>
<p>s 9(2)(f)(iv)</p>		
Opportunity	Description	Management Plan
<p>s 9(2)(f)(iv)</p>		
<p>Climate policy encourages a 'right tree, right place' approach that:</p> <ul style="list-style-type: none"> maximises economic, social and environmental outcomes strengthens the social license for forestry by strengthening the role of indigenous ecosystems in New Zealand's climate response 	<p>Current climate policy transfers financial capital from emitting industries to forestry.</p> <p>The perception that large scale and permanent exotic afforestation has negative environmental, economic and social impacts threatens the social license for forestry.</p> <p>There will always be a role for exotic plantation forestry in New Zealand. In most cases, permanent native forests will deliver greater social and environmental benefits than permanent exotic forests.</p> <p>ERP engagement showed that restoring native forests was the most popular policy proposal with the public and has cross-sector support.</p>	<p>Investigate how climate policy can encourage investment in the restoration and protection of native ecosystems.</p> <p>Find ways to align biodiversity incentives for landowners and to tie these to financial transfer(s) from within the private sector for a more sustainable funding stream. This will also help strengthen the social license for forestry as part of climate policy.</p> <p>Investigate ways to leverage the support for restoring native forests to build the social license for the use of all forests and forestry in climate policy.</p>
<p>Aligning climate (both mitigation and adaptation) and biodiversity policy has the potential to provide benefits in both areas as well as environmental, social and economic co-benefits</p>	<p>The potential positive and negative impacts of climate policy on biodiversity could be better factored into its development. For example, restoring wetlands as a flood management measure can improve freshwater quality, carbon sequestration, improve biodiversity outcomes and provide climate resilience.</p>	<p>Investigate options to embed biodiversity in climate change decision-making, particularly in adaptation decision-making (e.g., NbS for managed retreat).</p> <p>Consider ways to strengthen the position of NbS in our international climate negotiations mandate.</p>

CHAPTER FIVE – EMISSIONS PRICING CHAPTER

Key Successes from this Period



Industrial Allocation Reform
– CCRA amendment bill
introduced into the House



**ETS Unit Volume and Price
Control Setting regulations for
2023 gazetted so that emissions
align with emissions budget(s)**

PM Ardern priority areas:
The NZ ETS Scheme



9

Total actions



9

active actions



9

active funded
actions



0

unfunded



There has been progress on all actions for emissions pricing; however, there are delays in some key workstreams, primarily relating to the ETS review.

Progress has been made on updates to industrial allocation policy, with a Bill to amend the Act introduced at the end of 2022. Work to prepare for implementation i.e. adjusting allocations is underway. Implementation is subject to amending the Act which is due for first reading and referral to Select Committee.

Progress is also being made on the development of the market governance framework, with policy decisions projected to be sought in mid 2023. Issues relating to treating the NZU as a financial product, to leverage financial markets frameworks to regulate the secondary market are still being worked through. Legislative amendments to introduce a market governance framework will likely be introduced in late 2023 or 2024.

Cabinet decided to adjust the NZ ETS unit and price control settings for inflation, and these were considered by Cabinet to be aligned with emission budgets. The decisions are also aligned with the first ERP as those settings are the same used in the development of the plan. However, the settings are inconsistent with the recommendations of the Climate Change Commission, who noted different settings might be needed if ERP actions are delayed or do not realise expected abatement.

Significant work has been undertaken on developing a voluntary carbon market (VCM) framework including resourcing a team, commissioning reports, engagement with key stakeholders, and exploring interdependencies with several other climate policy projects including the NZ ETS review, agriculture pricing and sequestration, and native afforestation. The team is working with the biodiversity incentives' team, involving the sharing of understanding and ideas to develop biodiversity markets alongside VCM. The development of the NZ VCM framework will need to consider decisions made within all of those projects. We are on track to report back to cabinet on the VCM framework in the first quarter of 2023.

s 9(2)(g)(i)

s 9(2)(f)(iv)

CHAPTER FIVE – EMISSIONS PRICING CHAPTER

Risk & Barriers	Description	Management Plan
Risk that further continuation of NZ ETS settings creates misalignment with emissions budgets	In 2022 Cabinet took decisions on NZ ETS settings for 2023-2027 that were not those recommended of the Commission or the Ministry. There was concern about the impact of higher emissions costs on vulnerable households in the absence of a supporting transition strategy. Policies will need to be put in place to ensure vulnerable households are not disproportionately impacted.	Ensure that the development of the equitable transition strategy and policies to respond to price impacts that disproportionately impact vulnerable communities.
Risk that resourcing and funding for implementing the reform of industrial allocation is not sufficient	An extensive data collection and analysis exercise is required before updating allocation through regulatory change. The delivery of the current regulatory allocation setting involved over \$1m in spending (in 2010).	Early engagement in baseline funding decisions and development of detailed business case, with support from project manager.
<p>s 9(2)(f)(iv)</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p>	<p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p>	<p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p>
Impact of decisions on permanent forest category redesign in the ETS (Actions 5.2.3 and 14.2.3)	Refer to Chapter 14 summary	Refer to Chapter 14 summary
Opportunity	Description	Management Plan
Investigating policy options to incentivise large decarbonisation investments through the industrial allocation Bill	The Bill contains areas of decision-making discretion for the Minister, such as future updates to rates of allocations for individual industrial activities. Officials are exploring whether these areas can be used within negotiations with large emitters to increase regulatory and investment certainty.	Feedback on these issues will be sought through Select Committee consideration of the Bill. Further, Cabinet will receive recommendations on a negotiating strategy for a particular investment by a large emitter in March.

CHAPTER 6 – FUNDING AND FINANCE

Key Successes from this Period



Climate Emergency Response Fund

\$2.1 billion added at HYEUFU 2022; criteria extended to cover adaptation



NZ CS 1 -3

Aotearoa New Zealand Climate Standards released by XRB



Inaugural Green Bond Issuance



4

Pieces of new guidance From the FMA



11

Total actions (includes 3 completed actions)



8

active actions



8

active funded actions



0

unfunded



Quarters 3 and 4 of 2022 have seen a number of successes across the Funding and Finance chapter. At the end of 2022, three of the eleven actions have been completed, and seven of the eight active actions are progressing well.

A number of key milestones were reached for public sector funding and financing. In November Government issued \$3 billion of Sovereign Green Bonds through its inaugural issuance. In quarters 3 and 4, the Climate Emergency Response Fund's criteria were extended to cover adaptation, and it was topped up with an additional \$2.1 billion (based on revised ETS cash proceed forecasts) leaving \$3.6 billion remaining. A first tranche of agencies have also begun reporting their emissions through the Carbon Neutral Government Programme.

Progress has also been made in private sector funding and financing, through considerable effort from agencies including the FMA and the XRB. The FMA released four new pieces of guidance spanning from climate-related disclosure support to supporting an integrated financial system to assist New Zealanders' experiences buying an ethical investment. The XRB also released three climate standards (NZ CS 1, 2 and 3) in December to embed the requirements for climate-related disclosures. These came into effect for around 200 of the country's largest financial market participants from 1 January 2023.

Momentum of aligning funding and financing flows with climate investment opportunities continues to grow across the public and private sectors. Looking ahead, MBIE research has indicated that demand is sustained, but supply side changes through coordination and regulatory change will be critical to support sustained investment levels.

Continued work on actions in this chapter will support us to work with the financial sector on these challenges. We are continuing to engage with Toitū Tahua, the Centre for Sustainable Finance, and the banking sector through the Sustainable Agriculture Finance Initiative.

CHAPTER 6 – FUNDING AND FINANCE

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
<p>s 9(2)(f)(iv)</p>		

Price volatility in the Emissions Trading Scheme: Flow on impacts to the Climate Emergency Response Fund (action 6.1)

The size of the Climate Emergency Response Fund is reviewed twice annually alongside updates to Emissions Trading Scheme forecasts. Volatility in the ETS forecasts flows through to the CERF, reducing the predictability of the Fund.

Cabinet will consider embedding permanent processes for the CERF, including the approach to top ups, as part of a paper on Funding and Financing the Climate Transition in March.

Opportunity	Description	Management Plan
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Completion of first Cabinet-mandated review of New Zealand Green Investment Finance (NZGIF) (action 6.3)

At the time of NZGIF's establishment, Cabinet required an independent review within its first five years of operation. This review was commenced in Q2 2022.

Treasury is developing advice to Ministers based on the review outcomes, and has submitted a placeholder initiative into the Budget 2023 process for consideration.

Investigation of options to extend the Climate-related Disclosures regime to the public sector and explore how the wider private sector can consider climate change (action 6.6)

The government controls significant assets and investments across multiple agencies and will be subject to uncertainty and complexity caused by climate change. We are investigating how public sector organisations can adequately analyse and respond to climate change's impact on their operations.

MFE is working with the XRB to investigate application to the public sector, and is engaging with key stakeholders in 2023.

Ensuring non-listed entities consider climate change risks and opportunities would improve financial stability and remove barriers for banks, insurers and investment managers to analyse their exposure.

MFE and MBIE are exploring how non-listed entities or companies consider climate change risks and opportunities.

Publication of new information on the fiscal costs associated with the climate transition

In 2021, Ministers commissioned Treasury and the Ministry for the Environment to improve communications around the fiscal costs associated with New Zealand's Nationally Determined Contributions including specific analysis on the potential purchase costs associated with New Zealand's NDC1. In response, they have developed a joint publication which brings together and builds on existing information about the costs of the transition.

The publication is currently scheduled for late February. The future publication frequency has not yet been determined, but subsequent updates may build on parts of the report.

The publication also identifies areas for further work that could signal useful research areas for academics and others in the future.

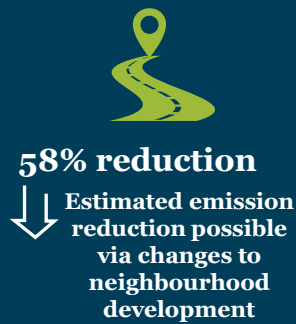
Leveraging Australia's commitment to develop a climate spending taxonomy with their finance sector (action 6.9)

The Australian Government has been working with the Australian Sustainable Finance Institute (ASFI) to develop a climate spending taxonomy. New Zealand can leverage the work being undertaken in Australia, including through connections between ASFI and Toitū Tahua, the Centre for Sustainable Finance.

The Ministry for the Environment will work with New Zealand's finance sector to support development of a taxonomy for the New Zealand private sector.

CHAPTER 7 – PLANNING AND INFRASTRUCTURE

Key Successes from this Period



Work to reform the resource management (RM) system is progressing at pace with legislation expected to be passed in 2023. One of the 5 objectives of the reform is to: 'better prepare for adapting to climate change and risks from natural hazards, and better mitigate emissions contributing to climate change'. This will be progressed via consolidated national direction in a new National Planning Framework (NPF) and new long-term regional spatial planning processes.

A feasibility study for a low emissions neighbourhood has been completed showing that interventions across transport, building and construction and infrastructure together could deliver a 58% emissions reduction compared to BAU neighbourhood design approaches, as well as significant health improvements and cost savings for residents.

Procurement is underway for work that will start to build the evidence base and lay the foundations for a nationally-consistent toolkit to quantify the emissions impacts of urban development and infrastructure decisions.

Policy issues/barriers to success:

- Timeframes for the RM reform and development of the NPF are challenging.
- Unfunded actions – only one action in the chapter is fully funded.

Sector changes:

The current economic environment means that there are challenges maintaining momentum in infrastructure and housing delivery across Aotearoa, for example, related to cost escalation, availability of labour, access to capital and supply chain challenges. Driving climate mitigation in this environment is likely to be more challenging.

CHAPTER 7 – PLANNING AND INFRASTRUCTURE

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Unfunded actions	Only one of the Planning & Infrastructure Chapter actions is fully funded (RM reform). The remainder are partially funded or remain unfunded. This includes actions that are foundational for other actions and to understand necessary direction for future ERPs (e.g., building the evidence base and tools to quantify emissions impacts of urban development and infrastructure).	Agencies are investigating funding pathways and options and making progress where possible. s 9(2)(f)(iv)
Challenging timeframes	<p>Timeframes for the RM reform and development of the NPF are challenging - detailed decisions on the NPF will need to be sought by 31 March 2023 to enable the first NPF to be notified shortly after the NBE Bill is passed.</p> <p>This means that content on climate mitigation for the NPF will need to be developed at pace. It will also need to be developed prior to the NBE Bill and SP Bill being enacted.</p>	<p>MfE has dedicated teams working on the NBE and SP Bills, NPF content, and the regional spatial strategies to ensure these work areas are resourced and can be delivered concurrently across the workstreams.</p> <p>The RM reform programme includes regular cross-agency engagement and opportunities for input into the NPF.</p>

Opportunity	Description	Management Plan
Opportunities for greater alignment with Urban Growth Agenda objectives and programmes	There are opportunities to support all three Urban Growth Agenda objectives (which are: emissions reduction, housing affordability, liveability and resilience) in the ways that ERP actions are designed and implemented. This can help to mitigate risks that emission reduction actions inadvertently decrease housing affordability, liveability or resilience.	Work with UGA cross-agency group and Minister's group to maximise co-benefits and minimise risks where relevant.
Opportunity to provide comprehensive direction to decision makers in the new RM system on emissions reduction initiatives	The NPF replaces all present RMA national direction and is required to be consistent with the ERP. The NPF is an opportunity to ensure the RSS and NBA Plans which replace the RMA planning documents are directed to include emissions reducing initiatives – consistent with the ERP actions.	Ensure the ERP Chapter 7 actions are appropriately reflected as direction in the NPF via MfE's RM reform programme.

CHAPTER 8 – RESEARCH, SCIENCE, INNOVATION & TECHNOLOGY

PM Ardern priority areas:
Climate Innovation Platforms

Key Successes from this Period

 <p>Over 40% Of research projects awarded as part of the contestable \$55m Endeavour Fund in November 2022 are directly related to climate mitigation or adaptation</p>	 <p>White Paper Launched As part of Te Ara Paerangi Future Pathways to outline the direction of travel and timing of key decisions for the reform of the science system</p>	 <p>Horizon Europe Cabinet agreed to commence formal negotiations for New Zealand to become an associate member of the largest multilateral research programme</p>	 <p>Climate Response Ministers Group Agreed to the strategic intent of the Climate Innovation Platforms</p>
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 <p>14 Total actions (includes 1 inactive action)</p>	 <p>13 active actions</p>	 <p>12 active funded actions</p>	 <p>1 active unfunded action 1 inactive unfunded action</p>
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Climate Chief Executives and Climate Ministers have been consulted on the strategic intent and s 9(2)(f)(iv) s 9(2)(f)(iv) Climate Innovation Platforms. This led to agreement on the strategic intent of the initiative s 9(2)(f)(iv)

s 9(2)(f)(iv)

s 9(2)(f)(iv)

s 9(2)(f)(iv)

Te Ara Paerangi Future Pathways White Paper published in December, outlining the direction and timeframes associated with the reform of the Science system. This includes outlining the timing and path forwards for setting the priorities for the future research system.

Cabinet has agreed to commence formal negotiations for New Zealand to become an associate member of Horizon Europe, the world's largest multilateral research programme that has a significant focus on climate change and developing low-emissions sectors.

Ongoing science investments continue to support research into areas related to climate change, emissions reduction approaches and low-emissions futures. This includes over 40% of the recent Endeavour Fund round, which is New Zealand's largest contestable science investment fund.

CHAPTER 8 – RESEARCH, SCIENCE, INNOVATION & TECHNOLOGY

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Broader economic conditions not favourable for innovation	<p>The § 9(2)(f)(iv) five conditions required to achieve impact from innovation. These include:</p> <ul style="list-style-type: none"> • A regulatory path to implementation for the innovation(s); and • There is a meaningful incentive to drive changes in behaviour on both the demand and supply side. <p>Ongoing risk, as if not resolved will slow adoption and investment in potential solutions.</p>	<p>These conditions are critical to the strategic case, that CRMG agreed to in December 2022. § 9(2)(f)(iv)</p>
Resistance to systems transformation	<p>Gaining buy-in across the system for the Climate Innovation Platforms approach is needed for an all-of-government approach to function effectively. This involves recognising that the transition to a low emissions economy will involve disruption as well as new opportunities.</p> <p>This is an ongoing risk and a common challenge globally associated with the implementation of systems/transformational innovation approaches.</p>	<p>RSI officials have been engaging with those in other portfolios to socialise the approach, outlining how it will support smart emissions reduction activity and the Government’s economic strategy.</p> <p>§ 9(2)(f)(iv)</p>
Funding is required to establish the system-level approach proposed by the Climate Innovation Platforms	<p>The Climate Innovation Platforms are a critical action and play an important role in the board’s adaptive management function.</p> <p>§ 9(2)(f)(iv)</p>	<p>§ 9(2)(f)(iv)</p>

Opportunity	Description	Management Plan
The establishment of the Climate Innovation Platforms will provide a mechanism for the assessment of opportunities to provide optionality for the New Zealand economy and respond to emerging gaps in the ERP.	<p>§ 9(2)(f)(iv)</p> <p>Impact: Significant long term impact</p>	<p>§ 9(2)(f)(iv)</p> <p>§ 9(2)(f)(iv)</p>

CHAPTER 9 - CIRCULAR ECONOMY AND BIOECONOMY

Key Successes from this Period



5

Research projects commissioned



1

Research project delivered



2

Cross-agency sub-groups formed to support research



20+

Expert and Stakeholder relationships built



7

Total actions (includes 5 inactive actions)



2

active actions



2

active funded actions



5

inactive unfunded actions



Two actions in the chapter, to commence a circular economy and bioeconomy strategy and invest in data collection and research to build a focused evidence base, are progressing at a steady pace.

Five research projects have been commissioned, with one delivered. The latter identifies current private sector circular initiatives and some strategic capabilities needed to facilitate a shift to a circular economy. A stocktake of public sector initiatives that support a circular economy is underway. Research is underway to identify emerging and future commercial opportunities of the bioeconomy focussed on novel high value uses of bioresources, utilisation of bio-waste streams, those that reduce emissions or are circular in nature. A gap analysis of public sector research on the supply and demand of bioenergy is completed. The first step in applying learnings from Māori traditional knowledge is underway to inform Māori-led research aligned with a priority area of the He Kai Kei Aku Ringa refresh: *investing in a low emissions, circular Māori economy as a necessary condition for prosperity*. Further research is nearly scoped including mapping the stocks and flows of materials in parts of the economy to identify potential for emissions reduction and greater value use of materials.

As an economy-wide strategy, extensive engagement is required, and the project has developed working relationships with a wide range of private and public stakeholders and national and international experts. Regular cross-agency meetings are held to build coherence across agencies work programmes and two cross-agency advisory groups have been formed to direct and support specific research.

The other five actions in the Chapter are not funded as part of the CERF and are therefore not active. However existing initiatives that are aligned to the five actions will be identified in the public sector stocktake which is underway.

CHAPTER 9 - CIRCULAR ECONOMY AND BIOECONOMY

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Stakeholder expectations exceed the budget and resourcing available	<p>As a late addition in the ERP process, the Chapter's commitments are high level and were developed without the detailed groundwork of other chapters.</p> <p>With partial funding for 2 of the 7 actions and a small team drawn from baseline, the project is phased and planned within these constraints to build an evidence base and commence a strategy. The stages of public consultation and completion of the strategy are subject to further funding.</p> <p>Stakeholders may hold different expectations of the actions and deliverables, including expecting faster development of a strategy and more progress on all the actions in this chapter than current resources permit.</p>	<p>A phased approach has been developed and approved by Minister Nash, the lead Minister for the Chapter.</p> <p>This approach has been shared with key stakeholders and further stakeholder engagement is planned.</p> <p>Deliverables are developed to be of practical use immediately both in policy and for the private sector. In the event further funding is not available to complete a strategy, products will be widely shared with stakeholders.</p>
Broad scope which requires coordination and access to a wide range of expertise and levers from across the lead Ministry and other agencies	<p>The scope of the circular economy and bioeconomy is very broad requiring input and leadership from other MBIE teams and agencies.</p> <p>Partial funding has placed restraints on capacity leading to expertise and engagement gaps.</p> <p>This results in the MBIE team restricting focus to key areas and reducing engagement. This translates to a lost opportunity cost to embed circular principles into current government decision-making. Expertise relies on the goodwill of key partners to provide capacity while facing their own priorities.</p>	<p>Key relationships have been formed with MPI and MfE. MPI is represented on the Steering Group.</p> <p>Cross-agency working groups are being used as a mechanism to coordinate and access expertise in other teams and departments, though are limited by the capacity of those participating.</p> <p>Research and other specialist expertise are being accessed through contracts for service, following budget guidelines.</p> <p>Engagement is targeted to priority opportunities (for example the Advanced Manufacturing ITP) to make best use of available levers.</p>

Opportunity	Description	Management Plan
Immediate practicality	The research outputs are designed to be utilised immediately to support other plans (including for example, the Advanced manufacturing ITP, HKKAR refresh, ERP2) and can inform private sector activities toward more circular activities, including investment decisions.	Stakeholders are engaged at all stages. Exploring range of communication channels to support wide access and use of research outputs.
Enabling coordination across climate actions	<p>Shifts to more circular practices will require actions across multiple portfolios and agencies. The team, within its capacity constraints, is seeking to leverage current work underway to capitalise on opportunities across the system.</p> <p>However, it is challenging, with the team and limited visibility of interdependencies across all actions, to leverage this opportunity in a coherent, coordinated manner.</p>	<p>The team will continue to leverage opportunities as they arise and capacity enables.</p> <p>We await further guidance from the IEB as discussions and work occur on interdependencies and coordination.</p>

CHAPTER 10 - TRANSPORT

Key Successes from this Period

PM Ardern priority areas:
Transport Mode Shift, Supply Chain Resilience



Freight Decarbonisation Unit Established



Clean Car Standard legislation passed



Launched Sustainable Aviation Aotearoa



Public Transport Subsidies extended to 31 March 2023



235% increase in BEV sales in 2022 compared to 2021



83

Total actions (includes 21 inactive and 4 completed actions)



58

active actions



40

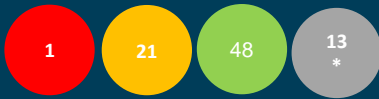
active funded actions



18 active unfunded actions

17 inactive unfunded actions

4 Inactive funded actions



Good progress has been made on actions from the transport chapter over the past six months despite a difficult operating environment. As many of the transport initiatives are new and complex, the Ministry and Waka Kotahi have stood up new programmes, established governance arrangements, recruited staff with different skillsets, and engaged with new partners. While transport has some major challenges ahead, a number of significant initiatives are progressing as planned and, in some cases, ahead of schedule.

Mahere Hohenga kia Whakakorea te Waro ā-Kawenga Decarbonising Transport Action Plan 2022-25 (the Action Plan) was published in December 2022. The Action Plan sets out how government transport agencies will partner with Māori, local government, businesses, and communities to embed a long-term strategic approach to reducing emissions across the transport system and to implement the transport chapter actions of the ERP.

Resourcing continues to be a significant barrier to progress and presents a risk to meeting the ERP timeframes. Key personnel have limited capacity to pick up new initiatives, or progress initiatives that are reliant on additional funding, without slowing down other priorities. Waka Kotahi is operating at capacity and has limited ability to take on new functions without impacting the delivery timeframes for existing initiatives. This is also indicative of broader challenges with turnover across the economy and difficulties attracting skilled staff. The tight labour market is creating challenges across the transport sector, including in the construction sector and the public transport sector.

Work is underway to prioritise initiatives that can deliver emissions reductions with relatively low overheads, such as scaling up existing programmes and building on initiatives that are already delivering good results.

The Ministry is managing the ERP as a portfolio. There is an expectation that performance will differ across initiatives, and initiatives that prove to be higher impact are given priority.

In regards to engagement the goal is for the overall portfolio to deliver the targets set in the transport chapter, more focus will be needed on local government as a result of the recent local government election results. Several ERP initiatives, particularly those related to pricing and reallocating street space to support walking and cycling, are dependant on local government and public support. Additionally, the pace of the ERP change makes carrying out robust and timely consultation a challenge.

Local government delivery of the first tranche of Transport Choices projects has been slower than anticipated which reflects the need for them to get geared up. However looking ahead local government is indicating demand for more investment and Government will need to keep investing to continue delivery momentum.

* 13 grey unfunded and not progressing actions

CHAPTER 11 - ENERGY AND INDUSTRY

PM Ardern priority areas:
Energy Strategy

Key Successes from this Period



11

GIDI projects completed, with annual total abatement of **118,792 t CO₂**



6,400

Warmer Kiwi Homes insulation retrofits



4,126

Warmer Kiwi Homes heating retrofits



Energy Strategy Terms of Reference published



16

Māori Housing Renewable energy Fund projects funded



53

Total actions (includes 1 completed & 3 inactive actions)



49

active actions

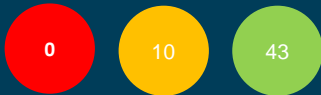


49

active funded



2 inactive funded action
1 inactive unfunded action



Across the energy and industry chapter there is an ambitious and comprehensive programme of work underway to transition New Zealand to a highly renewable energy system and ensure we can meet New Zealand's domestic and international targets.

Following release of the terms of reference in October 22, progress is now being made on developing the energy strategy. The strategy will play a key role in ensuring we achieve the Government's 2050 vision for energy and industry – for New Zealand to have a highly renewable, sustainable, and efficient energy system that is accessible and affordable, secure and reliable, and supports New Zealanders' wellbeing.

The strategy sits at the centre of this chapter's work programme and will ensure alignment and cohesion across the wide ranging work programme which has included:

- Allocation of the original \$69 million Government Investment in Decarbonising Industry (GIDI) Fund.
- Taking the expanded GIDI fund (with the additional \$650 million allocated for 2022-2026) to market and beginning negotiation of approved projects.
- Significant progress in exploring potential partnerships with New Zealand's biggest emitters through the expanded GIDI fund.

- Progress on developing a regulatory framework for offshore renewable energy, including the release of a discussion document on regulatory settings necessary to enable prospective developers to explore the feasibility of developing offshore energy infrastructure in New Zealand waters.
- Implementation of the real time wholesale electricity pricing which will deliver accurate and reliable spot prices to enable participants to take part in the market with more certainty.
- Developing a draft gas transition plan to enable public consultation in mid-2023.
- Completion of Phase 1 of the New Zealand Battery Project.
- Development of a discussion document on electricity market mechanisms to enable consultation in 2023.
- Successful early engagement with stakeholders as part of developing a Hydrogen roadmap.

CHAPTER 11 – ENERGY AND INDUSTRY

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Risk that supply chain constraints limit access to decarbonisation technology	Supply chain constraints could limit access to low emissions technologies. The Ukraine war has increased international demand for renewable technologies. There is a related risk that small operators may be less well resourced to invest in low carbon technologies.	Expanded GIDI fund (Action 11.4.1) will help lessen potential capital constraints. EECA is also investigating the cause of delays in delivering GIDI projects. These issues will be explored in the decarbonising industry action plan (Action 11.4.1).
Perceived uncertainty in policy reform may cause delayed investment in technologies necessary to support decarbonisation.	There are some residual uncertainties in areas of policy. This includes ongoing Resource Management Act reforms, the impact of the New Zealand battery project on the electricity market, and the future role of gas in New Zealand's energy system.	Progress on key policy initiatives such as developing the Energy Strategy and its key inputs (such as the Gas Transition Plan and Hydrogen Roadmap) and progressing the battery project will help clarify the path of the energy transition.
Cost of living and inflationary pressures	High costs of living and inflationary pressures could result in businesses and households delaying investment in low emissions technologies.	Continue to investigate energy hardship and energy equity initiatives to ensure transition is equitable.

Opportunity	Description	Management Plan
Transitioning New Zealand to a highly renewable energy system will unlock emissions reductions across the New Zealand economy	Successfully transitioning to a decarbonised energy system will be particularly important in enabling sectors such as transport, industry and building and construction to reduce their emissions through electrification.	Adaptive management approach to ensure that key work programmes to support the transition of the energy system (and keep up the pace of growth in renewables generation enables growing demand for electricity. Use of energy strategy (Action 11.5.2) to guide New Zealand to achieve its renewable energy target and aspirational renewable electricity target (Action 11.5.1).
Successful partnerships with large emitters under the expanded Government Investment in Decarbonisation	Partnership with New Zealand's large emitters through the expanded GIDI fund may unlock significant decarbonisation opportunities in the medium term.	Continued coordination across government to prioritise investigation and negotiation of potential partnerships with large emitters.

CHAPTER 12 – BUILDING AND CONSTRUCTION

Key Successes from this Period



Building Act Changes

Proposed changes to the Building Act that are estimated to support the equivalent emissions reductions of nearly 19,000 plane trips between Auckland and Wellington per year until 2050



9

Government building projects valued at over \$25 million registered for a 5 Green Star rating (New Zealand Excellence)



15168.2 tonnes

Building site material diverted from landfill through Kāinga Ora site clearance works in 2022



8

Legislative Discussion Group stakeholder meetings on proposed legislative and regulatory changes



H1 insulation

Adopted by Kāinga Ora from October 2022, in all new build social housing projects. Roll out to wider sector complete by May 2023



34

Total actions (includes 2 completed and 7 inactive actions)



25

active actions



16

active funded actions



9 active unfunded actions

3 inactive funded actions

4 inactive unfunded actions



The MBIE Building for Climate Change (BfCC) programme is progressing work on legislative and regulatory changes to enable requirements that will boost climate resilience and emissions reduction.

The Government recently announced proposed amendments to the Building Act 2004 to bring climate change into the Act, including waste minimisation plans and energy performance rating requirements (supports Actions 12.3.2, 12.1.3, 12.5.5, 12.1.1, 12.3.1, 12.5.2).



Initiatives are supported through stakeholder and sector engagement (e.g., legislation discussion stakeholder group and sector reference groups). The programme is committed to working with the sector to ensure it is supported and prepared for new legislative and regulatory requirements (e.g., the roll out of changes to H1 requirements).

In 2022, the sector contributed 6.7 percent of real GDP (\$18.1 billion) to New Zealand's economy and sector activity remained strong, with 50,209 new homes consented (up 3.2 percent from previous year).

However, the sector is facing economic pressures that may result in less business confidence and could impact the sector's ability to invest in innovation or the changes required to reduce emissions. BfCC is engaging with the sector to understand challenges and support requirements.

Improving housing supply and affordability is a key Government priority. BfCC is working with the Ministry of Housing and Urban Development (HUD) to ensure alignment with this work.

Potential barriers:

Major programme initiatives require Cabinet policy decisions and approvals in the first quarter of 2023 and as such depend on Government priorities and the availability of Cabinet time. BfCC aims to address this through forward planning and early engagement with Ministers to understand priorities.

CHAPTER 12 – BUILDING AND CONSTRUCTION

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Balancing low emissions building with housing affordability	<p>This work is occurring within the broader context of longer-term challenges around housing supply and affordability, and complex market conditions contributing to rising costs of construction.</p> <p>Low emissions building can have higher upfront costs, though longer term cost savings. There is a need to ensure measures to reduce building related emissions will continue to support housing affordability, urban development and intensification goals.</p>	<p>Stakeholder engagement on how to support people to consider carbon emissions early in the housing design phase. This will be critical to minimise upfront costs and support cost neutral, low carbon housing.</p> <p>Work with HUD and the Construction Sector Accord to ensure alignment with priorities.</p> <p>Commission further research to understand potential costs and benefits of proposed changes.</p>
Level of sector readiness for upcoming changes	<p>The sector may find it challenging to prepare for and adapt to new low emissions building requirements, which could delay progress in emissions reduction.</p> <p>Almost 98 percent of construction businesses are small, with fewer than 20 employees. Given broader challenges faced by the sector, they may lack capacity to engage with Government on proposed changes.</p>	<p>Target stakeholder engagement to understand current level of sector readiness and transition support needed, including information, guidance, training, data and tools.</p> <p>Propose a gradual transition for new requirements with steps clearly signalled in advance.</p> <p>Map opportunities to educate, promote, and prepare sector for the implementation of any new requirements (e.g., Kāinga Ora sharing lessons learnt and leading the way in adopting low emissions building practices).</p>
Unfunded or partially funded initiatives	<p>Some key actions included in the subsector targets modelling are currently either partially funded or unfunded.</p> <p>Having unfunded or partially funded initiatives that have been identified as priority areas may slow down or prevent progress in emissions reduction or reduce our credibility with the industry.</p>	<p>Investigate full funding pathways for partially funded and unfunded actions, including options to support pilot initiatives and incentives.</p>

Opportunity	Description	Management Plan
Aligning with the Urban Growth Agenda	<p>There is an opportunity to support the Urban Growth Agenda by designing our interventions in a way that is beneficial and aligns requirements for buildings with more liveable neighbourhoods, environments, and cities (e.g., building and neighbourhood designs that support active transport and reduce overheating).</p>	<p>Work with HUD, Ministry of Transport and UGA to maximise co-benefits of building-related emissions reduction and avoid unintended consequences.</p>
Equitable outcomes	<p>Through lifting the operational efficiency of buildings there is an opportunity to improve the housing conditions of disadvantaged groups.</p> <p>There are also opportunities to link in with other agencies to ensure that sector readiness initiatives create new employment/skillset opportunities for groups underrepresented in the industry.</p>	<p>Work with agency partners to understand where changes could support broader equity outcomes (e.g., Kāinga Ora, Ministry of Social Development, Te Puni Kōkiri, Ministry of Health, community partnerships).</p> <p>Engage and consult with sector participants.</p>

CHAPTER 13 – AGRICULTURE

PM Ardern priority areas:
He Waka Eke Noa, Climate
Action on Agriculture
Emissions

Key Successes from this Period



Consulted on emissions pricing proposals, with over 20,000 submissions analysed



Launched the Centre for Climate Action on Agricultural Emissions



Announced three early mitigation investments worth over \$16 million



Commenced development of tikanga-based programmes to lower emissions and initiated identification of pilot participants



19

Total actions



19

active actions



17

active funded actions



2

active unfunded actions



Key milestones were met on important actions to enable farmers and growers to reduce emissions and to utilise new emissions mitigation technologies, while many other actions focused on establishment activities.

Work is progressing at pace to develop and implement an emissions pricing mechanism for agriculture. Consultation on the Government's emissions pricing proposal concluded with over 20,000 submissions received and a series of roadshow meetings held with stakeholders. A range of strong stakeholder views were raised. The section 215 report on the proposed agricultural emissions pricing scheme was finalised and released on 21 December 2022. Planning to implement the mechanism is well underway alongside policy work to enable emissions to be priced by 1 January 2025.

Another highlight was launching the Centre for Climate Action on Agricultural Emissions, including a new public-private joint venture, at Fieldays on 30 November 2022. Several early research and development investments in potential mitigation technologies were also announced – totaling over \$16 million:

- \$7.8 million alongside Ruminant Biotech's \$9.5 million contribution to develop a methane inhibiting capsule, or bolus, which delivers at least a 70 percent reduction in methane whilst active.
- Over \$2.2 million alongside \$2 million from Beef + Lamb New Zealand and other partners to increase supply of low methane rams through genetic selection.
- \$6 million invested into urgently needed greenhouse gas measurement equipment and infrastructure to enable product developers to prove the efficacy of new products and get tools on farm sooner.

Development of climate-focused extension and advisory services focused on recruiting and establishing the team to stand up and implement information campaigns and extension programmes. Development of a pilot programme to support tikanga-based low emissions approaches has commenced, along with early work on a R&D programme that can include tikanga Māori and mātauranga Māori. Several potential Māori agribusinesses were identified to participate. A mātauranga expert leadership panel will be established in Q1 2023 to help guide the programme's establishment and long-term delivery.

CHAPTER 13 – AGRICULTURE

Risk & Barriers	Description	Management Plan
<p>s 9(2)(g)(i)</p> <p>(Action 13.1.1 and 13.1.2)</p>	<p>s 9(2)(g)(i)</p>	<p>The Government has committed to working with the sector on the development of the next stage of policy detail.</p> <p>MPI is setting up implementation workstreams alongside the joint policy work with MfE to enable implementation planning at pace.</p>
<p>Timelines originally published in the ERP for accelerator projects were ambitious, and some have had to be shifted to new project timelines</p> <p>(Action 13.4.3)</p>	<p>Some of the food and fibre science and mātauranga Māori accelerator projects under Action 13.4.3 have had a change in timing. The date for completing the final plans has been extended from Q4 2022 to Q2 2023.</p>	<p>New project timelines have been established, and milestones are being set and met within the new timelines.</p> <p>MPI will continue to monitor achievement of these milestones.</p>
<p>Potential for underspend of CERF funding</p>	<p>Several CERF-funded initiatives are currently tracking behind expected spend, raising the risk of year-end underspend.</p>	<p>MPI reforecast spend in early December 2022 to identify actions at risk of underspend. This will be revisited in Q1 2023 for updated spend and to identify any corrective actions.</p>
<p>R&D investment could fail to deliver enough cost-effective mitigation solutions to be able to meet 2030 and 2050 targets</p>	<p>R&D involves trying out new, untested ideas that may turn out to be unworkable or not cost effective. There is no guarantee of success or uptake of new technology by the sector. This is an inherent risk of all R&D.</p>	<p>Investment decisions will be made in a deliberate, coordinated way by entities with expertise that spans the whole innovation pipeline from early stage research to commercialisation. The R&D portfolio will comprise a mixture of higher and lower risk investments. Progress of all R&D will be monitored and non-viable research will be identified and stopped at an early stage.</p>
Opportunity	Description	Management Plan
<p>Development of information campaigns and extension programmes</p> <p>(Action 13.3.1)</p>	<p>Well designed information campaigns and extension programmes will support producers to understand where the emissions are generated in their systems and which mitigations will help reduce them. A wide range of organisations and networks will be used to raise awareness of the information and programmes including the On Farm Support networks.</p>	<p>With evidence based information and extension support, producers will be more confident about making changes and applying the appropriate mitigations for their systems. Reductions in emissions will take time to flow through systems.</p>

CHAPTER 14 – FORESTRY

Key Successes from this Period



Launched Forestry Industry Transformation Plan (ITP) at Fieldays 2022



Completed an external evaluation of 1 Billion Trees in November 2022



Engaged with the native nursery sector to refine options for reducing the cost of native afforestation



Consulted on changes to National Environmental Standards for Plantation Forestry (NES-PF)



13

Total actions (includes 1 inactive action)



12

active actions



11

active funded actions



1 active unfunded action

1 inactive unfunded action



There has been strong progress on key forestry actions. A notable success was the launch of Te Ara Whakahou – Ahumahi Ngahere, Forestry and Wood Processing Industry Transformation Plan (ITP), at Fieldays in November 2022. The ITP focus for the first half of 2023 moves into standing up the implementation group with industry, unions and iwi, and developing a framework for co-investment with the sector to expand wood processing capacity.

Work is progressing on encouraging native forests as long-term carbon sinks. In light of the permanent category of the New Zealand Emissions Trading Scheme (ETS) opening in January 2023 with current allowance for both exotics and natives, Cabinet has committed to redesigning the category with an indicative date for the revised category to come into operation in 2025. Active work is underway to consider the impact of the ETS permanent category on the long-term strategy for encouraging native afforestation. In addition, work is progressing in the Maximising Forest Carbon Research Programme to expand look up tables to recognise a wider range of native and exotic forest types, and a request for proposals has been issued for research on a remote sensing capability pilot to measure carbon sequestration in trees.

Work continues on options to increase low-cost native seedling supply to support sustainable expansion of the native sector. Nursery sector engagement is underway to pinpoint constraints and test business case options. These options include automation strategies in the nursery sector and possible partnership opportunities.

An external evaluation of the 1 Billion Trees Fund has assessed the performance, impact, effectiveness, and value of the fund.

Public consultation on how forests are managed through the National Environmental Standards for Plantation Forestry (NES-PF) sought feedback on managing the effects of exotic carbon forestry, giving local councils more control over where forests are planted, and improving wildfire risk management.

Progress on expanding the supply of woody biomass has focused on developing an implementation plan to enable drawdown of funding held in tagged contingency. Discussions with Treasury on approving this implementation plan are ongoing.

CHAPTER 14 – FORESTRY

Risk & Barriers	Description	Management Plan
Impact of decisions on permanent forest in the ETS may create barriers to achieving greater levels of native afforestation over the longer term (Action 14.2.3)	<p>The permanent category of the ETS opening in Jan 2023, combined with the higher cost of natives, means it is likely more commercially attractive to plant permanent exotic forestry relative to native. Policy work is underway to consider the re-design of the category.</p> <p>The interdependency between ETS settings for exotic forests and actions to incentivise native forestry means that native afforestation may be harder to incentivise relative to permanent exotic forestry.</p>	<p>Action 14.2.3 is being rescoped to consider how to incentivise native afforestation given ETS permanent forestry settings.</p> <p>Expansion of look up tables will recognise a wider range of native and exotic forest types.</p> <p>s 9(2)(g)(i)</p>
Monitoring deforestation of pre-1990 native forests is yet to commence (Action 14.3.1)	<p>Further work on this action pending, depending on competing work programmes and further scoping.</p> <p>There are a range of new and existing policies in New Zealand designed to manage or restrict the harvest or deforestation of pre-1990 native forests and protect native ecosystems. The scale of the issue is considered to be small, with deforestation of pre-1990 native forests occurring at low levels.</p>	<p>MPI plans to develop a monitoring framework, with triggers and associated actions in response, in 2023.</p>
Research capacity in short timeframe	<p>The originally proposed multi-year Forestry R&D programmes within CERF required the existing R&D providers (e.g., Crown Research Institutes) to have spare capacity to start new programmes immediately within 2022/23.</p>	<p>MPI has developed a phased procurement of R&D that allows research providers to complete the R&D within their constraints but the phasing within the multi-year programme has changed.</p>
Investment returns for woody biomass are below required returns (Action 14.4.2)	<p>Planting and growing woody biomass to offset coal usage returns lower profit than planting other forest but reduces gross emissions by replacing fossil fuels. Satisfactory investment criteria are still under development.</p>	<p>MPI is looking to uncover opportunities for partnering with industry to de-risk investment - which will result in later drawdown of tagged funds than planned.</p>

Opportunity	Description	Management Plan
Accelerate implementation planning and actions to harness the potential of woody biomass	<p>MPI's implementation plan will directly increase the supply of woody biomass and stimulate private sector investment in supply infrastructure, through Crown planting of 10,000 hectares of short rotation energy forest, and targeted research and development.</p>	<p>One of NZ's biggest opportunities to reduce industrial emission is through decarbonising process heat – energy that is primarily used for warming spaces and industrial processes.</p> <p>Improving fuel supplier confidence to invest in supply infrastructure will ensure woody biomass is available at a viable price – a key factor underpinning fuel switching decisions for process heat users.</p>

CHAPTER 15 - WASTE

Key Successes from this Period



New Waste Strategy approved by Cabinet



\$75 million new investment resource recovery and organics processing infrastructure



Transforming kerbside recycling policy decisions kerbside food scraps collections and business food waste separation



7 organisations selected to develop national programmes to support households and businesses to reduce food waste



14

Total actions (includes 2 inactive actions)



12

active actions



12

active funded actions



2

inactive unfunded actions



Progress is well underway for the Waste chapter, enabled by CERF funding to implement initiatives to reduce emissions from waste. All active actions are funded.

The Waste Minimisation Fund (WMF) reopened in October 2022 with \$75m (over two years) in addition to approx. \$45m in waste levy funds. This is targeted to organic waste diversion and resource recovery infrastructure including for construction and demolition materials. There is strong sector interest and good progress in funding pipeline development. To date 150 enquiries have been received for assessment. Suitable organisations are invited to a subsequent application stage. Estimates of forecast waste diversion (and associated emissions reduction) for potential projects are forming.

Council requirements to offer food scraps or food and garden waste collections in towns (over 1,000 residents) prior to 2030 were approved by Cabinet in November 2022 and will be publicly announced in early 2023. This will significantly increase access to services to divert food waste across New Zealand; and is supported by new WMF funding packages for councils. So far, 14 councils have been invited to apply following EOI. Resources to support councils to deliver new and expanded kerbside collections are also being developed.

An expression of interest process has been completed to select suitable organisations to develop and deliver national-scale food waste reduction programmes for businesses, households and Māori. Multi-year funding agreements are currently under negotiation.

Improvements to waste data are underway, including a feasibility study to inform future landfill gas capture improvements and regulations, development of a landfill waste composition survey programme and scoping for the national waste data collection and reporting programme.

A new Waste Strategy was approved by Cabinet in December 2022 and will be announced in early 2023. This new strategy and subsequent Action and Investment Plan will provide a clear strategic direction for the waste sector and was a central recommendation made by the Climate Change Commission. Proposed Waste Minimisation Act reform will also enable delivery of ERP actions including licensing and separation of business food waste.

CHAPTER 15 - WASTE

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
<p>Despite significant investment available, the delay between funding approvals and commissioning of plant may see resource recovery and organic processing facilities opening later in Emissions Budget 1 and into Emissions Budget 2. This will likely impact the required abatement of biogenic methane emissions reductions from waste for the first emissions budget. (actions 15.2.2 & 15.3.2)</p> <p>Risk of Climate Emergency Response (CERF) funding being withdrawn if not spent with the allocated year</p> <p>UNFCCC review may result in change in landfill gas capture emissions projections</p>	<p>The Waste Minimisation Fund (including CERF funds) is expected to be fully committed over the next two years, but drawdown and outward payments will happen over time. There is high interest, so it is expected that the full \$75m will be used with phasing reviewed quarterly.</p> <p>We can commit funds for infrastructure projects into deed within the funding period, however delivery may take longer than anticipated due complexity of projects and global market pressure e.g., inability to get equipment, council consenting delays. In addition, a delay in getting new national food waste reduction programmes into deed this year may result in a CERF underspend in 2022/23.</p> <p>UNFCCC expert reviewers have recommended an improvement to how we estimate the efficiency of landfill gas capture recovery rates in Aotearoa New Zealand. This may impact our ERP sub-sector targets and the validity of waste chapter actions (less efficient LFG capture equates to higher modelled emissions).</p>	<p>Organic waste diversion infrastructure is being prioritised through the WMF and national programmes are currently in negotiation. There is strong sector interest and good progress in funding pipeline development to date. Funds will be awarded and committed to deed as soon as possible.</p> <p>Proposed approach includes improving the Ministry's overall institutional framework in line with UNFCCC recommendations; and seeking actual landfill gas recovery rate data and information from operators, using a combination of voluntary and regulatory measures.</p>
Opportunity	Description	Management Plan
<p>New Waste Strategy to be published and announced in early 2023</p> <p>Planned Waste Minimisation Act reform 2023</p> <p>Building Act Amendment, cabinet approval 2022</p> <p>Appetite for business food waste reduction (action 15.2.3)</p>	<p>The new Waste Strategy and subsequent Action and Investment Plan will provide a clear strategic direction for the waste sector.</p> <p>This reform and subsequent enabling regulations will enable specific ERP actions to be realised, including waste operator licensing and waste separation. There is already some delay to this work. Further delay (e.g., due to revised government priority policy programme) may mean that new enabling waste legislation and regulations are not in place as proposed within the first Emissions Budget period.</p> <p>Cabinet agreed in September 2022 to amend the Building Act to require mandatory site waste minimisation plans during building and construction activities.</p> <p>Cabinet have agreed in principle to continue to work with business to separate out food waste from general rubbish. This will result in less food wasted, more food redistributed and more diverted from creating emissions in landfill. It is expected that new waste legislation will provide powers to develop regulations in line with ERP actions.</p>	<p>The Action and Investment Plan will be resourced in 2023 to aid in sector engagement with policy and infrastructure coordination to enable ERP waste chapter actions.</p> <p>The WMA reform will be resourced as a priority. Officials are considering approaches to enable delivery of this important policy work to meet ERP and other objectives.</p> <p>Work with MBIE's Building for Climate Change team and undertake cross sector engagement to develop regulations and tools to support the sector to be ready to reduce construction and demolition waste when regulations come into effect.</p> <p>This will require new enabling waste legislation and regulations to enact. Regulations will be resourced as a priority post legislation being enacted.</p>

CHAPTER 16 – FLUORINATED GASES

Key Successes from this Period



Cabinet permission to consult on F-gas policy proposals obtained



Public Consultation for F-gas policy proposals completed



Cabinet policy approvals on workplace licences scheme obtained



4

Total actions



4

active actions



4

active funded actions



0

unfunded



The Fluorinated gases actions published in the first Emissions Reduction Plan are on track. All actions are funded and are being actively progressed. There have been no significant delays in progressing actions.

In late 2022, public consultation was undertaken for the proposed regulated product stewardship scheme for refrigerants and the prohibition on the import and sale of pre-charged equipment containing hydrofluorocarbons. This provided the opportunity for good engagement with stakeholders attending webinar and workshop events and submissions are currently being analysed. The outcomes of this consultation will support current policy development and provide information about the refrigerant industry that can be used to support future F-gas policy development and chapter action implementation.

The workplace licensing program for refrigeration, heating and cooling technicians lead by the Ministry for Business, Innovation and Employment, which supports the transition to F-gas alternatives is currently on track.

Government officials attended the Meeting of the Parties in October and November 2022 for the Montreal Protocol which coordinates global efforts to reduce emissions from Fluorinated gases and ozone depleting substances. These events, and our ongoing engagement with overseas regulators and industry, helps keep New Zealand's policies consistent with international trends and helps to identify opportunities for further emissions reductions.

CHAPTER 16 – FLUORINATED GASES

For the Board: risk/issues and opportunities raised in the chapter summaries are being managed in the line in the first instance and are being included in the 6-month report for visibility purposes unless otherwise stated.

Risk & Barriers	Description	Management Plan
Availability of F-gas emissions modelling	<p>Emissions modelling is needed to understand and measure the specific impact of F-gas actions and for Climate Impact Policy Assessments required for the next round of Cabinet decisions. F-gas emissions modelling for the first Emissions Reduction Plan was limited and contained some policy and timing assumptions that have been since been refined. There is a small number of domestic experts available to undertake the F-gas modelling required, which may delay submitting to Cabinet.</p> <p>In addition, the most recent F-gas emissions projections produced by MfE for international reporting differ from those used by the Commission and government to set emissions budget sector sub targets. These projections do not include reductions from ERP actions in Emissions Budget 1.</p>	Procuring F-gas modelling expertise is a priority in 2023 and other potential contractors from overseas will be identified should the preferred option become unavailable.
Timeliness of F-gas prohibitions	The proposed timeline for prohibitions on the import and sale of pre-charged equipment (Action 16.2) is based on when alternative gases are available for different applications. If this timeline introduces prohibitions too early, this may jeopardise vital industries that rely on this equipment.	Mitigation is proposed through public consultation and ongoing engagement with the industry.

Opportunity	Description	Management Plan
Training and accreditation Scheme for technicians using synthetic refrigerant (action 16.1)	The key cause of most refrigerant emissions are leaks from poor installation and management of refrigerant equipment by unqualified people. The opportunity is to introduce mandatory training requirements to ensure all people installing and managing refrigerant containing equipment are qualified. The Ministry expects the training requirements will increase New Zealand's recovery rate (approx. 11 percent) in line with other jurisdictions with compulsory training requirements (approx. 60-90 percent).	The Ministry for the Environment has proposed a quality standard to ensure that only qualified technicians recover refrigerant and arrange for its disposal. It has also proposed restricting the purchase of bulk refrigerant to qualified technicians. The new Product Stewardship Organisation will develop a qualification framework. These policies are expected to significantly reduce refrigerant leakage and bring New Zealand's emissions in line with international jurisdictions.
Cross-agency cooperation	F-gases are an increasingly cross disciplinary topic. There are many connections to work being done in energy efficiency, transport, and health and safety sectors. Strengthening relationships with relevant government agencies to identify areas of potential mutually benefit and avoid perverse outcomes is needed.	Cross agency meetings have been arranged to bring awareness of various agencies work and will look at identifying opportunities to align work and achieve efficiencies.
New plasma arc destruction facility to be built in New Zealand (action 16.4)	<p>Currently, synthetic greenhouse gases are sent to Australia for destruction, as New Zealand does not have a facility that can destroy refrigerants through an environmentally safe manner.</p> <p>A new facility with New Zealand would allow refrigerant gases to be destroyed domestically, reducing cost of destruction and emissions from transport.</p>	The current voluntary product stewardship scheme for refrigerants has commissioned a domestic plasma arc destruction facility which is expected to be operational in 2024.