



Ministry for the  
**Environment**  
*Manatū Mō Te Taiao*

# Ministry for the Environment's climate-related disclosure

2022/23



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

Published in November 2023 by the  
Ministry for the Environment  
Manatū mō te Taiao  
PO Box 10362, Wellington 6143, New Zealand

ISSN: 2815-9535  
Publication number: ME 1799

Crown copyright New Zealand © 2023



*Ministry for the*  
**Environment**  
*Manatū Mō Te Taiao*

# Contents

<b>Context</b>	<b>02</b>
Our third year of disclosure	02
Our commitment	03
Our progress and planned improvement	03
<b>Our approach to disclosure</b>	<b>05</b>
Applying the TCFD framework in a public sector context	05
TCFD principles for effective disclosure	05
<b>Governance</b>	<b>07</b>
Executive leadership's oversight of climate-related risks and opportunities	07
Management's role in assessing and managing climate-related risks and opportunities	09
<b>Strategy</b>	<b>10</b>
Climate-related risks and opportunities over the short, medium and long term	10
Impact of climate-related risks and opportunities on our strategy and financial planning	18
<b>Risk Management</b>	<b>20</b>
Process for identifying and assessing climate-related risks	20
Process for managing climate-related risks	20
How processes for identifying, assessing and managing climate-related risks are integrated into our overall risk management	21
<b>Metrics and Targets</b>	<b>24</b>
Metrics used to assess climate-related risks and opportunities	24
Our greenhouse gas emissions and related risks	25
Targets used to manage climate-related risks and opportunities and performance against our targets	26

# Context

## Our purpose is a flourishing environment for every generation – he taiao tōnui mō ngā reanga katoa

Our **Strategic intentions** | **He takunetanga rautaki 2023–2027** describes how we will go about our work, centred on six principles:

- |   |   |   |   |
|---|---|---|---|
| 1 | We lead across the environmental system                                 | 4 | We connect the wellbeing of people to the environment       |
| 2 | We bring the environment to the heart of decision-making                | 5 | We accelerate change on the ground                          |
| 3 | We bring the Treaty of Waitangi and te ao Māori into our work every day | 6 | Our advice and actions are grounded in science and evidence |

## Our third year of disclosure

*“If we fail to adapt, we may find ourselves in a constant state of recovery, with increasing risk to lives and livelihoods, property and infrastructure, taonga, culture and heritage and health and wellbeing.”<sup>1</sup>*

The changing climate has presented numerous challenges in our 2022/23 reporting year. On the back of COVID-19, several severe weather events have given an uncomfortable view on what climate change can *mean*, bringing home the reality for many across the motu: roads and homes badly flooded and key state highways cut off by landslide, lives lost and livelihoods put at risk, and significant physical and emotional toll at the whānau and community level.<sup>2</sup> More than 10,000 people were displaced and 11 people died during Cyclone Gabrielle.

Our **Annual Report** | **Pūrongo ā-Tau 2022/23** outlines our practical involvement in the response, from providing communities in affected regions with guidance to deal with storm waste and contamination caused by flooding, to long-term work prioritising resilience and adaptation.

The Ministry's response required operational agility to meet the pace and demands on existing work programmes, shifting priorities and emergency initiatives. In practice, this meant establishing expert teams (such as the Severe Weather Integrated Response team), delivering rapid emergency legislation, adjusting our resources and funding, and contributing our expertise and specialist services. Our remote workforce means we can have staff personally impacted by events directly alongside their communities.

These climate events and our response raises questions about how the Ministry and wider government will act with similar climate-based emergencies in the future. The Ministry will reflect on the urgency of response, how we are structured to react in the future, and what will happen if these pressures continue to grow. We will consider the range of events that could happen, and the complexities that will need to be navigated.

<sup>1</sup> **Community-led retreat and adaptation funding: Issues and options**, p 14.

<sup>2</sup> **Outrage to optimism**, p 31 and **Community-led retreat and adaptation funding: Issues and options**, p 14.

We are committed to planning how we will react in the future. Proactive response requires the ability to look out and across the horizon, to help understand how immediate actions, plans or improvements made now may perform later. Many of the capacity and resilience improvements we need to undertake internally are the same required on the ground: risk assessment, stress testing, and planning. It means working through the uncertainty and asking hard questions and finding solutions. If we fail to adapt, and find ourselves in a constant state of recovery, we need to understand what this means for central agency operational resilience.

## Our commitment

*“Risks are defined as the effect of uncertainty on objectives. Risk can be negative (a threat) or positive (an opportunity). Risk management refers to activities carried out to reduce the impact of uncertainty to an acceptable level, or to take advantage of opportunities.”<sup>3</sup>*

The extreme rainfall that Aotearoa New Zealand saw in January this year, and Cyclone Gabrielle in February, have reinforced once again how urgent it is that we both reduce our emissions and make sure we are adapting to our changing climate.<sup>4</sup> This message was given in our commentary on the release of the Intergovernmental Panel on Climate Change Synthesis Report of its Sixth Assessment (AR6). We do not see ourselves separate to the action we ask of the rest of Aotearoa.

The Ministry remains committed to assessing, managing and disclosing our own climate-related risks and opportunities. This allows us to test, support and develop wider climate-related risk management best practice. The implementation of wider actions in the **national adaptation plan** has led to government agencies embedding climate change into their own processes and future planning. Building proactive risk management in this new area will take practice, and we are dedicated to sharing what we learn.

Our third annual disclosure remains aligned to the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). It covers progress and actions across the TCFD four domains: Governance, Strategy, Risk Management, and Metrics and Targets.

The 2022/23 financial year was the second year of implementing our ambitious action plan. We continue to maintain progress towards our 2025 gross emissions reduction target, and implementation of our **Sustainability Strategy July 2022 – June 2025**. Across all four domains however, we still have work to do.

## Our progress and planned improvement

We have been a growing organisation that has expanded its functions, including a greater focus on implementation of policy across the motu. The 2022/23 financial year has seen significant milestones achieved in our work programme and these are detailed in our Annual Report. Milestones of relevance to this disclosure include:

- ◆ the release of the national adaptation plan, that sets out the Government’s priorities to make homes, infrastructure and communities more resilient to climate change. We are now focussing on implementing the actions set out in the plan
- ◆ publishing our first Long-term Insights Briefing, which considers the future wellbeing of land and people in Aotearoa
- ◆ our Tūmatakōkiri team establishing a quality assurance process to support the Ministry, leading to more consistent policy advice on te Tiriti o Waitangi (the Treaty of Waitangi) and Māori rights and interests. This has operated throughout 2022 and has started to normalise consideration of Tiriti commitments and analysis of Māori rights and interests. It ensures that policy options and advice show Māori perspectives, and how Māori interests and rights have shaped options for consideration

3 What good looks like: Risk management | Audit New Zealand.

4 IPCC report brings together the global picture on climate change | Ministry for the Environment.

- ◆ the release of the **Ngā Kōrero Āhuarangi me te Ōhanga: Climate Economic and Fiscal Assessment 2023** report prepared by the Ministry and Treasury. This provides a framework for understanding the fiscal impact of climate change and a new analysis of the costs of emissions under New Zealand's Paris Agreement commitments
- ◆ the appointment of experts to the Interim Ministerial Advisory Committee to guide the Māori-led climate action platform as part of the emissions reduction plan
- ◆ the climate-related disclosure requirements coming into effect, intended to ensure that the effects of climate change are routinely considered in decision-making
- ◆ the allocation of \$24.7 million in Budget 2023 under the Climate Emergency Response Fund for the Ministry led all-of-government Climate Data Infrastructure initiative
- ◆ in anticipation of the announcement of the Inquiry into climate adaptation, the Ministry published *Community-led retreat and adaptation funding – issues and options*. This paper looks at the current system and what new powers, roles and responsibilities might be needed to support community-led retreat, as well as how the costs of adaptation might be met
- ◆ the release of Resource Management Act (RMA) 1991 guidance providing information for local government on how to consider the national adaptation plan and the emissions reduction plan when developing or changing plans under the RMA
- ◆ the release of the National Policy Statement for Indigenous Biodiversity, which is an essential part of our response to biodiversity decline in Aotearoa.

The 2022/23 financial year involved efforts to strengthen our risk management practices and include climate-related risk in this process. This led to climate-related risk being included in the responsibilities of a newly established Investment Advisory Committee. Embedding climate-related risk management, in line with our existing commitments, remains ongoing.

To date, our efforts have focused on:

- ◆ developing new climate-related scenarios based on latest projections, drawing on in-house and subject matter expertise
- ◆ regular scenario planning to identify and assess our climate-related risk
- ◆ publicly disclosing our yearly emissions reduction performance, and developing an action plan to reduce our carbon emissions under the Toitū carbonreduce programme
- ◆ signing on to the Climate Leaders Coalition Statement of Ambition 2022.

Our plans for the 2023/24 financial year include:

- ◆ developing and trialling a robust, repeatable climate-related scenario process that can be extended across the Ministry
- ◆ improving our governance, risk management, and accountabilities to manage climate-related risk, and embedding climate risks and opportunities in our reporting cycles
- ◆ using climate risk as a lens to look at our investments and policy work, to ensure they consistently address climate-related risk
- ◆ investigating and developing tools to assess and scan investments for climate risk
- ◆ preparing an annual 'Climate change – risk and opportunities' report detailing our climate risk as found through scenario planning
- ◆ committing to ongoing assessment of gaps and capability growth where required
- ◆ reviewing stakeholders' and partners' plans, and supporting them effectively with climate change knowledge and tools.

# Our approach to disclosure

## Applying the TCFD framework in a public sector context

As a public sector organisation, we are demonstrating leadership by aligning with the Taskforce on Climate-related Financial Disclosure (TCFD) framework and associated guidance.

The TCFD's framework adapts financial risk management and reporting mechanisms to help organisations address and disclose their climate-related risks to capital markets, investors and other stakeholders. It covers four domains and 11 sub-domains, as shown in figure 1. We have followed and, where necessary, adapted the TCFD framework to align with our public sector context.

## TCFD principles for effective disclosure

Our disclosure has been prepared in accordance with TCFD guidance material. For example, the TCFD recommends that climate-related disclosures should have the following characteristics:

1. Represent relevant information
2. Be specific and complete
3. Be clear, balanced, and understandable
4. Be consistent over time
5. Be comparable among organisations within a sector industry or portfolio
6. Be reliable, verifiable, and objective
7. Be provided on a timely basis.

**FIGURE 1: THE TASKFORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE FRAMEWORK: RECOMMENDATIONS AND SUPPORTING RECOMMENDED DISCLOSURES**







# Governance

## Executive leadership's oversight of climate-related risks and opportunities

Given the importance and complexity of climate change issues, responsibility for overseeing the Ministry's management of climate-related risks and opportunities sits with Te Pūrengi, our highest governance body.

Te Pūrengi has overall responsibility for governance of the Ministry. It is accountable for setting and achieving our overarching organisational and policy strategies, and actively monitors delivery, compliance and reporting, including in relation to risk.

Four director-level groups oversee aspects of the Ministry's performance, providing advice and recommendations to Te Pūrengi as required.

Te Mīmiro is responsible for testing, advising and taking decisions to support the successful design and delivery of our organisational strategies, including in relation to risk.

Te Aukaha is responsible for testing, advising and taking decisions to support the successful design and delivery of the environmental outcomes we are seeking.

In the 2022/23 financial year we established two new governance groups to oversee our non-departmental expenditure and activities.

1. The Investment Advisory Committee oversees and monitors the design and delivery of our funds' investment strategies, ensuring they align with and support the achievement of the Ministry's overarching strategies, outcomes and priorities, as well as broader government objectives. Climate-related risk has been included in the Committee's list of responsibilities, stated in its Terms of Reference. This is a first step towards our commitment to consistently address climate-related risk in our funds and investments.
2. The New Zealand Emissions Trading Scheme (NZ ETS) Advisory Committee tests and advises on the design and delivery of ETS operations, focusing on ETS financial operations, ETS market operations, and ETS governance arrangements.

Te Pūrengi oversight of risks and opportunities is supported by the work of our Audit and Risk Committee, an advisory body that provides independent advice, review and oversight of the following areas:

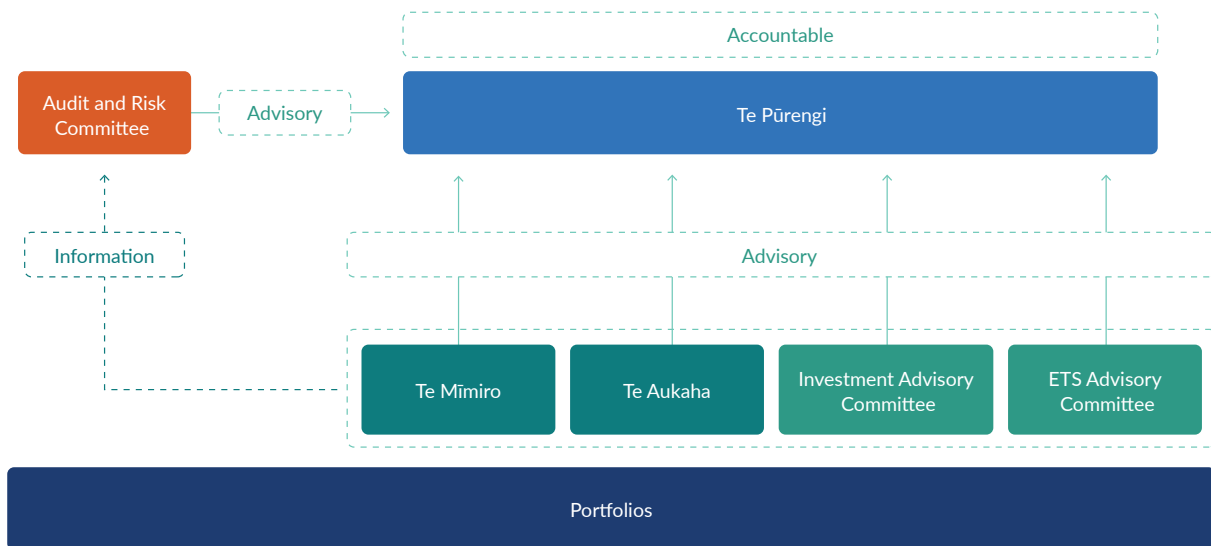
- ◆ strategic direction, and associated risks and opportunities
- ◆ organisational risk management and internal control systems and processes
- ◆ financial and non-financial performance and reporting
- ◆ internal and external audit functions
- ◆ governance arrangements
- ◆ legislative compliance processes and systems.

The Committee meets quarterly to update our operational and strategic risk profile. The Committee has no executive powers regarding its findings and decisions. Primary responsibility for ensuring resolution of issues lies with the Chief Executive and Te Pūrengi.

In addition, there are specific roles for the:

- ◆ Chief Operating Officer, who is responsible for climate-related risks covered in our Sustainability Strategy, and risks and opportunities relating to our operations.
- ◆ Deputy Secretaries, who are responsible for climate-related risks and opportunities relating to policy delivery in their business groups.
- ◆ Director Operations and Manager Risk, Assurance and Resilience, who provide advice to help identify and manage risk to our objectives.

**FIGURE 2: GOVERNANCE FOR THE MINISTRY FOR THE ENVIRONMENT**



## **We recognise the importance of demonstrating climate leadership**

As the Ministry for the Environment, climate change issues are integral to our core purpose and strategic priorities. This includes supporting Aotearoa New Zealand's transition to a climate-resilient, low-emissions economy. Our leadership teams collectively possess technical, strategic and risk-management expertise on climate change and are required to remain at the forefront of climate science and policy developments.

To ensure we can fulfil our strategic priorities, we recognise the importance of understanding and addressing our own climate-related risks and opportunities. This will be particularly important as we continue to transition our operations towards implementation, prioritise what's needed for recovery programmes from severe weather events, continue to oversee major funds and investment programmes, and explore how we will adapt in future as the environmental management landscape changes.

We established and formalised some of our governance processes to align with leading practice and our own ambitions in this area. We will carry through our commitments from last year, and in the 2023/24 financial year commit to:

- ◆ formally documenting and regularly reviewing the climate-related roles and responsibilities held by Te Pūrengi
- ◆ formalising the policies and processes for updating Te Pūrengi about our climate-related risks and performance to enable informed debate and decision-making.

## **Management's role in assessing and managing climate-related risks and opportunities**

Climate change issues are integral to the execution and management of our strategic priorities. Te Mīmiro is the governance group responsible for governing key organisational strategies and functions across the Ministry. It plays a critical role in ensuring our climate-related risks and opportunities are appropriately and systemically managed, so we achieve our objectives.

Last year we intended to focus on climate-related risk governance capability within Te Pūrengi and Te Mīmiro, in the context of our expanding responsibilities. Even with our existing knowledge and expertise, regular review is important, and we have dedicated resource to review and provide support where required. However, capability building was a lower priority due to a change in Chief Executive, further development of our work programme, and urgent new work pressures arising from severe weather events in early 2023.

In the 2023/24 financial year we are committed to ensuring progress continues on formalising:

- ◆ roles and responsibilities held by Te Mīmiro for our climate-related risks and performance
- ◆ policies and processes operational units will use to keep Te Mīmiro informed about our climate-related risks and performance.



# Strategy

## Climate-related risks and opportunities over the short, medium and long term

### Our approach to climate-related risk

Aotearoa is exposed to a range of climate-related risks, such as those set out in **Arotakenga Tūraru mō te Huringa Āhuarangi o Aotearoa**, New Zealand's first national climate change risk assessment. These 'physical' risks may be acute, such as extreme weather events, or chronic, such as sea-level rise and warming temperatures. Physical risks threaten natural and human systems including operations, supply chains, and employee safety.

We recognise the Intergovernmental Panel on Climate Change's *Climate Change 2022: Impacts, Adaptation and Vulnerability* assessment that the risks are becoming more complex and difficult to manage. Multiple climate hazards will occur simultaneously, and multiple climatic and non-climatic risks will interact, resulting in a compounding of overall risk that could cascade across sectors and regions.<sup>5</sup>

We also recognise that climate-related risks and opportunities will arise from transitioning to a resilient, low-emissions economy. These 'transition' risks and opportunities may relate to technology uptake, socio-economic disruption, public trust and reputation, regulatory reform, and climate-related legal and financial risks. Transition risks may also combine with physical risks to affect different organisations in diverse ways.

### Using scenario analysis to explore climate-related risk

In accordance with the Taskforce on Climate-related Financial Disclosure's (TCFD) recommended process (figure 3), since 2020/21 we have used scenario analysis to identify, assess and interrogate our climate-related risks and opportunities over the short, medium and long term.

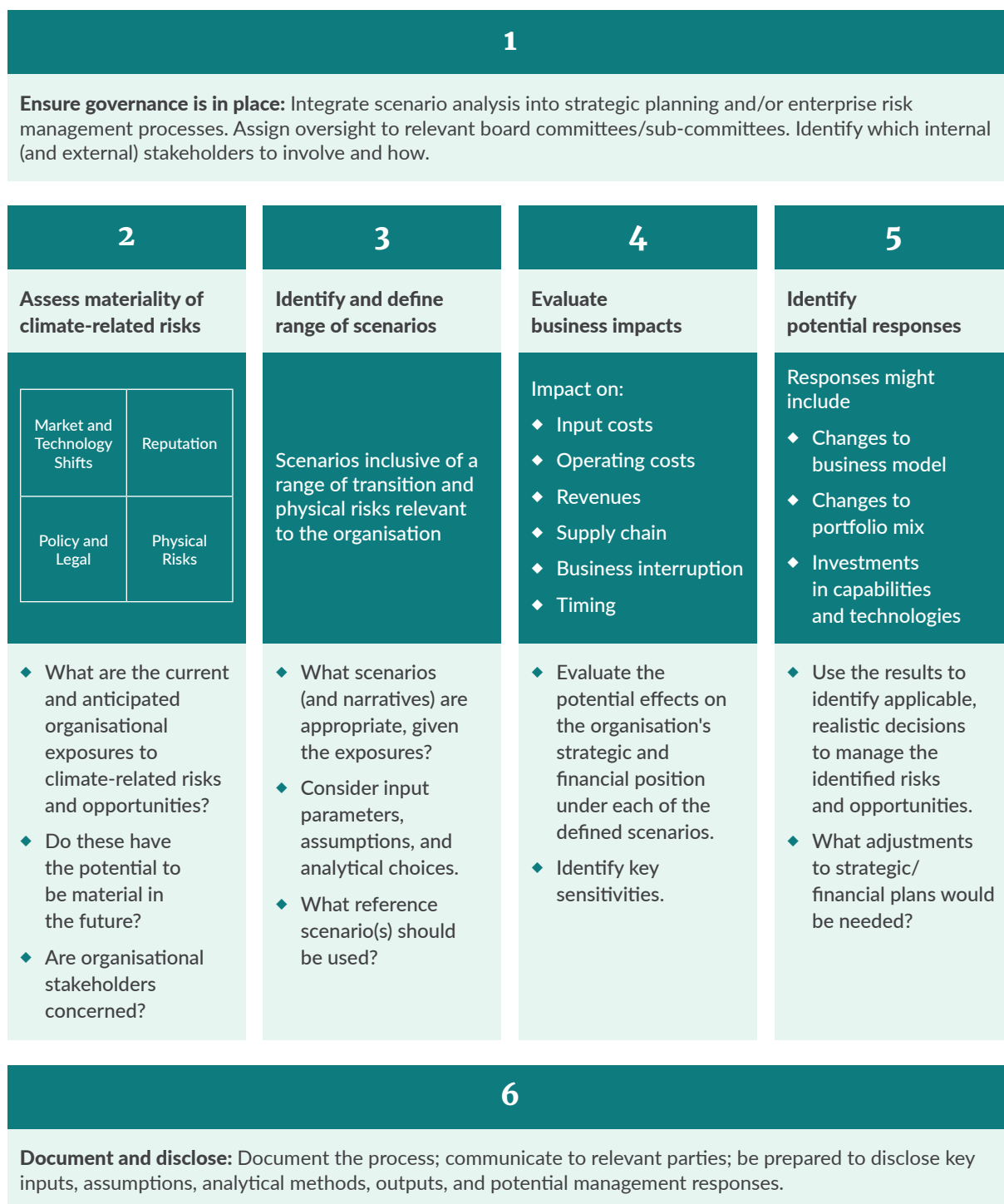
In the context of climate-related risk, we define these time horizons as:

- ◆ short term – 1 to 5 years
- ◆ medium term – 5 to 15 years
- ◆ long term – 15 years and beyond.

These time horizons align with our internal risk management framework and reflect the importance of assessing both the immediate and longer-term impacts of climate change.

<sup>5</sup> Climate Change 2022: Impacts, Adaptation and Vulnerability, p 20.

**FIGURE 3: THE TASKFORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE'S RECOMMENDED SCENARIO PROCESS**



Scenario analysis is a validated tool to help organisations interrogate material risks and opportunities and stress-test their strategic resilience by exploring how they might perform under challenging but plausible futures. In the 2020/21 and 2021/22 financial years, we developed and interrogated three climate-related risk scenarios:

1. **'Orderly'**: Describes a world where New Zealand follows global momentum to rapidly decarbonise by mid-century.
2. **'Disorderly'**: Describes a world where New Zealand undertakes climate action that is late, disruptive and out of sync with the wider world.
3. **'Hothouse'**: Describes a world with significant warming and high exposure to physical risks.

### Stress testing our strategic resilience

The most valuable outputs of scenario analysis are the strategic insights gained from the process, rather than the scenarios themselves. Previously we used our seven strategic priorities as a platform for stress testing our strategic resilience across our operations, policy, plans and finances.<sup>6</sup> Our material climate-related risks and opportunities that were identified from this process, and our scenario analysis methodology, are described in detail in our **first** and **second climate-related disclosures**.

The potential risks and uncertainties were identified to be a risk to our strategic intent if the hypothetical scenarios or stressors in the scenarios were to occur at a future date. Although we cannot predict our future organisational attributes, operating environment, or whether these risks will materialise, identifying these potential risks will allow us to improve the resilience of our strategy to a range of possible futures.

### Our climate-related risks and opportunities to address these risks

#### Physical risks

- ◆ Climate change impacts: extreme weather events, drought, wildfire, sea-level rise, and biodiversity loss.
- ◆ Risk for our operations, facilities and staff.
- ◆ Implications for our strategic priorities such as risk to environmental restoration efforts, risk for land and food systems, and environmental trade-offs caused by climate-induced pressures.

#### Transition risks

- ◆ Risk of differing public/political expectations, rapid changes to our role without a corresponding timeframe to increase in capability (eg, an increased operational role).
- ◆ Risk of a siloed approach to climate change issues and disjointed thinking across public and private sector.
- ◆ Risk of a loss in trust/reputation in us due to the challenging nature of climate-related policy.
- ◆ Risk of prioritisation and trade-offs preventing us from fulfilling our other strategic priorities.
- ◆ Risk of New Zealand's resource management and food system failing to cope with climate-induced stressors.
- ◆ Opportunity to drive Aotearoa New Zealand's transition to a climate-resilient, low-emissions economy.
- ◆ Opportunity to support best practice responses to climate-related risks and opportunities.
- ◆ Opportunity to establish long-term-oriented processes, mechanisms and solutions.
- ◆ Opportunity to work more closely with those that may be most affected by climate change including iwi, hapū and Māori partners and local councils.

<sup>6</sup> Strategic intentions | He takunetanga rautaki 2023–2027 and Statement of Intent | Tauākī Whakamaunga Atu 2020–2025.

### Resourcing and staff wellbeing

- ◆ Risk to staff wellbeing due to increase in pace or work programme demands from climate-related pressures, including potential adverse treatment of our staff or work.
- ◆ Risk to the wellbeing and delivery capacity of partners and stakeholders working with us, who face climate-related impacts and pressures in their communities.
- ◆ Risk of insufficient expertise in critical/emerging areas and staff composition not reflecting the skills needed in an increasingly complex environment.
- ◆ Opportunity to attract talented people due to our relevance in driving change.
- ◆ Opportunity to fully embed and expand our current wellbeing approach.

### Tiriti o Waitangi

- ◆ Risk of failing to uphold Tiriti o Waitangi obligations.
- ◆ Opportunity to work in meaningful partnership with iwi and Māori, and apply te ao Māori and mātauranga Māori to navigate Aotearoa New Zealand's transition to a climate-resilient low-emissions economy.

### Partnerships and stakeholders

- ◆ Risk of civil instability, loss of trust in public/scientific institutions, and polarised social perspectives.
- ◆ Opportunity to build consensus, strategic partnerships, and cross-government and public/private collaboration.

### Legal risks

- ◆ Risk of failing to meet legislative, regulatory and international obligations (eg, Zero Carbon Act targets, Paris Agreement, and our Nationally Determined Contribution) and a perception that the Ministry did not do enough to prevent this.
- ◆ Risk of unintended consequences caused by short-term policymaking (eg, insufficient engagement).
- ◆ Risk of the Ministry being held legally accountable for harm caused by escalating climate-related impacts.
- ◆ Opportunity to develop new legal structures and processes, particularly to address adaptation issues.

### Financial risks

- ◆ Risk of lost investments, opportunity cost and insufficient/mismanaged climate-related funds.
- ◆ Opportunity to drive co-benefits by financing climate solutions (eg, reduced waste, improved urban form).
- ◆ Opportunity to mainstream climate-related risk and systems thinking into economic analysis/modelling.

## Refreshing scenarios for the 2023/24 financial year

*“The topic was chosen because land connects every part of te taiao (the environment). How land is cared for affects lakes, rivers, oceans, air, climate and native species. The health of the land and wellbeing of people are also closely interconnected, because land is central to Aotearoa New Zealand's economy, culture and many other aspects of society [...]”<sup>7</sup>*

The effects of climate change in Aotearoa are becoming increasingly clear, with changing patterns in annual and seasonal rainfall, droughts, storms and floods. This will challenge our ability to deliver our objectives, and changes in the political context, social and political capital, or technology could present risks and opportunities. These changes will have implications for long-term planning, operational capacity, and service delivery across government.

<sup>7</sup> Where to from here? How we ensure the future wellbeing of land and people: The Ministry for the Environment's Long-term Insights Briefing 2023, p 9.

Unfortunately, some of the risks identified in previous scenarios played out in the 2022/23 financial year including:

- ◆ implications for our strategic priorities such as risk to environmental restoration efforts, risk for land and food systems, and environmental trade-offs caused by climate-induced pressures
- ◆ risk for our operations, facilities and staff, including a higher-than-expected workload.

However, some opportunities identified in scenario planning also occurred including the opportunity to:

- ◆ support best practice responses to climate-related risks and opportunities
- ◆ establish future-orientated processes, mechanisms and solutions
- ◆ work more closely with those that may be most affected by climate change including iwi, hapū and Māori partners and local councils
- ◆ develop new legal structures and processes, particularly to address adaptation issues.

## Building our practice

In refreshing our climate-related scenarios we wanted to trial a new approach. Having previously stress tested all seven strategic priorities, we focused on one: 'Build a sustainable and resilient land and food system.'<sup>8</sup> Land, land-use change, and the impacts from climate change, is at the nexus of many of our policies and plans, and more immediately, our severe weather integrated response.

Experts from GNS Science and Tonkin and Taylor supported our process and developed our scenarios, drawing on in-house expertise and knowledge. This approach ensured that the scenarios produced are relevant, robust, practical and effective when it comes to the annual planning and analysis stage.

We have learnt that addressing climate-related risk is a practice, and in the 2023/24 financial year we want to test whether we can develop a robust, repeatable process, focusing initially on a 'resilient land and food system.' This approach means the concept can then be extended across the organisation, to other operational areas, and help embed the practice of climate-related risk identification, understanding and management.

## Te ao Māori

Te ao Māori perspectives needed to be incorporated into the scenario design. This was achieved through use of in-house expertise, with external peer review, to capture the relevant drivers of future change, including key drivers for Māori. This included considering shifts to or from co-governance, the value of Māori cultural identity, and wider social and political change. Other drivers that were identified (such as challenging (in)equality in Aotearoa), have parallels in the Rauora framework.<sup>9</sup>

A key issue is how to ensure the legitimacy of te ao Māori in the current process and how to improve future processes. There are also other conceptual and methodological challenges for developing Māori-specific scenarios. We want to explore this further with mana whenua, to discuss plausible outcomes for the different drivers within the current framework, to enrich the narratives, and weave insights together.

## Scenario archetypes

Our new climate-related scenarios will be used in the 2023/24 financial year to explore and stress test our strategic resilience across our operations, policy, plans and finances. We will explore programmes and operations anchored to the strategic priority 'Build a sustainable and resilient land and food system'.

8 The Ministry's scenarios will be different to the Aotearoa Circle's **Agriculture Sector Climate Change** Scenarios and Roadmap. Those seek to support the agricultural industry's ability to respond to the challenges of climate change. We have different objectives and work areas compared to industry, eg. policy development. This results in different drivers of change being identified in the scenarios.

9 The Rauora framework was developed by Ihirangi, the operational arm of Te Pou Take Āhuarangi (Climate Lead) for the National Iwi Chairs Forum. It outlines a set of cohesive cultural values and principles from which to approach climate action. The Rauora framework is a lens through which the adaptation strategy and national adaptation plans will be progressed. See the 'Adapting in partnership with Māori' section in **Aotearoa New Zealand's first national adaptation plan**.



The three scenarios are, in brief:

1. **Ambitious Transition** – Describes a world of global cooperation and aggressive decarbonisation. There is rapid transition in Aotearoa characterised by innovation, nature-based solutions, and transformative practices, and a drive for a fair, equitable approach. Physical risks are less severe, and biodiversity is enhanced.
2. **Reality Bites** – Describes a world of rising temperatures and uneven global decarbonisation. Physical impacts increase in Aotearoa, with many whānau and communities displaced by extreme weather. Recovery and costs put pressure on government services. Incremental policy changes, disrupted distribution networks, and higher input costs drive innovation.
3. **Abandoned Ambitions** – Describes a world of unabated global emissions, geopolitical unrest and high to extreme physical risks. Aotearoa experiences impacts such as high risk of severe droughts, mass migration, global food shortages, and supply chain volatility. Biodiversity depletion, climate anxiety and strained government is in near constant reactive mode.

The three scenarios are 'nested' within the following global, national, climate and socio-economic models, pathways and policy assumptions.

## AMBITIOUS TRANSITION

### Summary

The Ambitious Transition scenario represents a plausible future world where all nations actively pursue aggressive emissions reductions, which limits global temperature increases to 1.5°C (with limited overshoot), with global net zero emissions being achieved by 2050. This requires an upward trend for human development across all nations, with substantial investments in education and health, rapid and strategic economic growth, supported by well-functioning national and international institutions, focussed on an increasing shift towards sustainability. Change is disruptive and transformational due to strong leadership and a social acceptance that urgent action is needed.

*Global cooperation | Rapid technological development | High economic growth | Strong environmental policy | Low population growth, declining inequity | Renewables and energy efficiency | Dietary shifts (low meat) | Forestry protection*

**Physical risks:** are lower in severity due to the aggressive transition efforts.

**Transition risks:** are higher due to the significant policy changes that drive the transition and the market, societal and technology changes that follow.

Scenario	Description
<b>Intergovernmental Panel on Climate Change, Shared Socioeconomic Pathway 1: 'Taking the Green Road'</b>	The world moves gradually, but pervasively, toward a more sustainable path, emphasising more inclusive development that respects perceived environmental boundaries. Management of the global commons slowly improves, educational and health investments accelerate the demographic transition, and the emphasis on economic growth shifts toward a broader emphasis on human wellbeing. Driven by an increasing commitment to achieving development goals, inequality is reduced both across and within countries. Consumption is oriented toward low material growth and lower resource and energy intensity
<b>Intergovernmental Panel on Climate Change, Representative Concentration Pathway 2.6</b>	Is a 'very stringent' pathway. According to the Intergovernmental Panel on Climate Change, RCP 2.6 requires that CO <sub>2</sub> emissions start declining by 2020 and go to zero by 2100. It also requires that methane emissions (CH <sub>4</sub> ) go to approximately half the CH <sub>4</sub> levels of 2020. Like all the other RCPs, RCP 2.6 requires negative CO <sub>2</sub> emissions (bioenergy with carbon capture and storage).
<b>Shared-climate Policy Assumptions for New Zealand: 'Clean Leader'</b>	Aotearoa is at the forefront of increasing global mitigation and adaptation efforts through technological innovation and policy design. Environmental or intangible social values are considered in decision-making.

<b>Climate Change Commission: 'Tailwinds'</b>	Further technology and further behaviour change assumptions provide an upper bound for how far and how quickly emissions could be reduced based on current evidence and judgements. Assumes strong behaviour and technological change across all sectors.
---	---

## REALITY BITES

### Summary

In the Reality Bites scenario social, economic and technological trends do not deviate significantly from established patterns until it is too late. Competing and conflicting objectives between sustained economic growth and development, and climate stabilisation, with limited global coordination sees multiplying loss and damages. The push to net zero is (initially) characterised by policy contradictions, with a rapid expansion in renewables and electrification, alongside continued growth of fossil fuels exploration under the guise of transition fuels. In a last-ditch effort to stabilise the climate and limit warming to 2–3°C by 2100, policies to reduce emissions based on current pledges and targets are invoked.

*Social, economic, technological trends follow historic patterns | Uneven economic growth | Environmental degradation | Moderate population growth, persisting inequity | Renewables and energy efficiency | Material intensive consumption*

**Physical risks:** are moderate to high.

**Transition risks:** are high in developed countries and those who trade with developed countries.

Scenario	Description
<b>Intergovernmental Panel on Climate Change, Shared Socioeconomic Pathway 2: 'Middle of the Road'</b>	The world follows a path in which social, economic and technological trends do not shift markedly from historical patterns. Development and income growth proceeds unevenly, with some countries making relatively good progress while others fall short of expectations. Global and national institutions work toward but make slow progress in achieving sustainable development goals. Environmental systems experience degradation, although there are some improvements and overall the intensity of resource and energy use declines. Global population growth is moderate and levels off in the second half of the century. Income inequality persists or improves only slowly and challenges to reducing vulnerability to societal and environmental changes remain.
<b>Intergovernmental Panel on Climate Change, Representative Concentration Pathway 4.5</b>	According to the Intergovernmental Panel on Climate Change, RCP 4.5 requires that CO <sub>2</sub> emissions start declining by approximately 2045 to reach roughly half of the levels of 2050 by 2100. It also requires that methane emissions (CH <sub>4</sub> ) stop increasing by 2050 and decline somewhat to about 75% of the CH <sub>4</sub> levels of 2040. Like all the other RCPs, RCP 4.5 requires negative CO <sub>2</sub> emissions; however, to a lesser degree than RCP 2.6.
<b>Shared-climate Policy Assumptions for New Zealand: 'Kicking and Screaming'</b>	Climate action is dominated by concerns about competitiveness within shifting and restricted markets. Aotearoa lags behind increasing global mitigation and adaptation efforts, adopting weak emissions targets. Adaptation is reactive and focused on maintaining rather than transforming existing activities.
<b>Climate Change Commission: 'Headwinds'</b>	There are higher barriers to uptake of technology and behaviour change across key sectors and measures. Assumes conservative improvements in technology and modest change from current business as usual.

## ABANDONED AMBITIONS

### Summary

The Abandoned Ambitions scenario represents a plausible future in which global emissions continue to grow unabated largely due to a failure (reversal) of key emissions reduction policies in key developed, high-emitting countries. This leads to warming levels that reach 2°C by 2050, and continue to increase steeply thereafter, reaching 4°C by end of century. Climate 'chaos' enters mainstream discourse, across all sectors and communities. Food insecurity is exacerbated by climate change due to crop-production-related impacts of warmer and drier conditions in important agricultural regions.

*Competition among regions | Low technological development | Environmental and social goals low priority | Focus on domestic resources | High population growth | Slow economic growth*

**Physical risks:** are high to extreme. Extreme climatic conditions cause havoc both globally and in Aotearoa from 2035, leading to significant and widespread economic impacts for all economies. Globally, supply chains are increasingly disrupted by extreme climatic conditions. This, in turn, causes geopolitical unrest which exacerbates supply chain disruptions and significantly constrains availability of critical inputs/materials.

**Transition risks:** limited.

Scenario	Description
Intergovernmental Panel on Climate Change, Shared Socioeconomic Pathway 3: 'Regional Rivalry'	A resurgent nationalism, concerns about competitiveness and security, and regional conflicts push countries to increasingly focus on domestic or, at most, regional issues. Policies shift over time to become increasingly oriented toward national and regional security issues. Countries focus on achieving energy and food security goals within their own regions at the expense of broader-based development. Investments in education and technological development decline. Economic development is slow, consumption is material-intensive, and inequalities persist or worsen over time. Population growth is low in industrialised countries and high in developing countries. A low international priority for addressing environmental concerns leads to strong environmental degradation in some regions.
Intergovernmental Panel on Climate Change, Representative Concentration Pathway 7.0	No additional efforts to constrain emissions.
Shared-climate Policy Assumptions for New Zealand: 'Unspecific Pacific'	Little concern about climate change as short-term economic interests prevails. Fossil fuel and livestock food production continue, with limited consideration of other environmental side-effects. Both adaptation and mitigation are seen as externalities to be avoided unless forced by circumstance.
Climate Change Commission: 'Current Policy Reference'	Estimates of New Zealand's emissions profile assuming current behavioural, technological and policy remains unchanged.

## Impact of climate-related risks and opportunities on our strategy and financial planning

### Our strategic approach to climate-related risks and opportunities

As the Ministry for the Environment, understanding and responding to the risks and opportunities of climate change is fundamental to fulfilling our purpose.

We have a Sustainability Strategy for 2022–2025, that sets out our ambition and the requirements of the Carbon Neutral Government Programme. This is our third consecutive Sustainability Strategy. Progress towards achieving this strategy is monitored by the Chief Operating Officer and reported to Te Pūrengi.

In addition to our more obvious physical and transitional risks, we continue to recognise that climate change is a systemic threat that creates issues for our supply chains, the preservation of trust and confidence, and wellbeing. We also acknowledge the Intergovernmental Panel on Climate Change commentary that its assessment clearly shows tackling the different challenges climate change presents involves everyone – governments, the private sector, and civil society – working together to prioritise risk reduction, as well as equity and justice, in decision-making and investment.<sup>10</sup>

Our vision – a flourishing environment for every generation | he taiao tōnui mō ngā reanga katoa – means looking further into the future at the wellbeing of generations to come. This is critical to our role as an environmental steward and system leader. Taking a long-term perspective helps us to understand where and how action may be required today to meet our stewardship goals.<sup>11</sup>

In the 2023/24 financial year we reiterate our commitments to:

- ◆ continue to systematically analyse our climate-related risks and opportunities that may have a significant impact over the short, medium or long term
- ◆ explore alternatives to standard decision-making tools which are limited in their capability to represent the dynamic and uncertain nature of climate-related risk
- ◆ develop a coherent vision for the future to mitigate the chance of climate fatigue and establish trust with those most affected by the transition
- ◆ continue to invest in being scientifically credible, equitable and evidence-led to enhance our reputation for reason and reliability
- ◆ continue efforts to enhance staff wellbeing for the long term, with an understanding of possible future pressures
- ◆ improve our use of remote working options to enhance staff wellbeing and stakeholder relations
- ◆ improve our workforce's ability to be adaptative by building resilience and dynamic capabilities
- ◆ conduct a forward-looking analysis of our current relationships using scenario analysis
- ◆ front-foot strategic partnerships with those who will be at the centre of change
- ◆ take the opportunity to have difficult, future-orientated conversations with stakeholders about climate-related risk.

<sup>10</sup> **Climate change: a threat to human wellbeing and health of the planet.** Intergovernmental Panel on Climate Change press release.

<sup>11</sup> **Where to from here? How we ensure the future wellbeing of land and people: The Ministry for the Environment's Long-term Insights Briefing 2023**, p 9.

## **The impact of climate risk on our financial planning**

The TCFD's recommended framework was developed with the objective of preventing climate-related financial risks from cascading through the global economy and is therefore primarily focused on the financial implications of climate change.

As a central government organisation with a limited asset base, our overarching focus is on the extent to which climate-related risks may challenge the fulfilment of our strategic priorities, of which financial planning is a key underpinning consideration. Our non-departmental expenditure has renewed focus on management and climate-related risk governance and capability.

We have established policies requiring climate change to be factored into our operations-related financial planning, including travel and facilities. 'Pūtea – Our finances' remains a pillar in our Sustainability Strategy for 2022–2025. We are also continuing to focus on developing processes to ensure the financial implications of climate change are factored into policy development, including non-climate policy.



# Risk Management

## Process for identifying and assessing climate-related risks

Our commitments remain to formalise our identification and assessment of climate-related risk. In the 2023/24 financial year these commitments are:

- ◆ dedicating resource to identify and assess climate-related risks
- ◆ clarifying where climate-related risk information is required as a specific input in decision-making
- ◆ developing common risk management structures and disciplines that allow for climate-related risks to be contextualised and prioritised alongside other risks we manage over various timescales.

Our third scenario analysis and planning, with updated scenarios, will further ground this work. We have combined our considerable in-house knowledge and subject matter expertise in the scenario development process. We hope that the repeatable process we are developing will help embed tailored, climate-related risk integration in planning cycles.

We recognise we have not created a systematic approach entirely across all business groups. Our identification and assessment of climate-related risks still relies on our staff's subject matter expertise in fulfilling their management and planning functions. We will continue to build on the commitments we set.

## Process for managing climate-related risks

In the 2023/24 financial year we will continue to improve our oversight of and approach to managing and monitoring climate-related risks through our core strategic and organisational performance functions. Further support will result from improved capability for monitoring and managing climate-related risk by those overseeing existing risk management systems.

In the 2023/24 financial year we maintain our commitment to:

- ◆ developing and implementing a strategy or plan to manage (ie, mitigate, transfer, accept or control) our climate-related risks
- ◆ establishing new structures, policies and processes to manage climate-related risks
- ◆ establishing new processes to measure, monitor and report on progress in managing climate-related risks.

## How processes for identifying, assessing and managing climate-related risks are integrated into our overall risk management

As set out in figure 4, our overall approach to risk management involves distinguishing between the following types of risk:

- ◆ **strategic risk:** uncertainty associated with our longer-term strategic objectives
- ◆ **tactical risk:** uncertainty associated with our decisions, investments and plans to execute our strategy
- ◆ **operational risk:** uncertainty associated with shorter-term, day-to-day operational activities and functions.

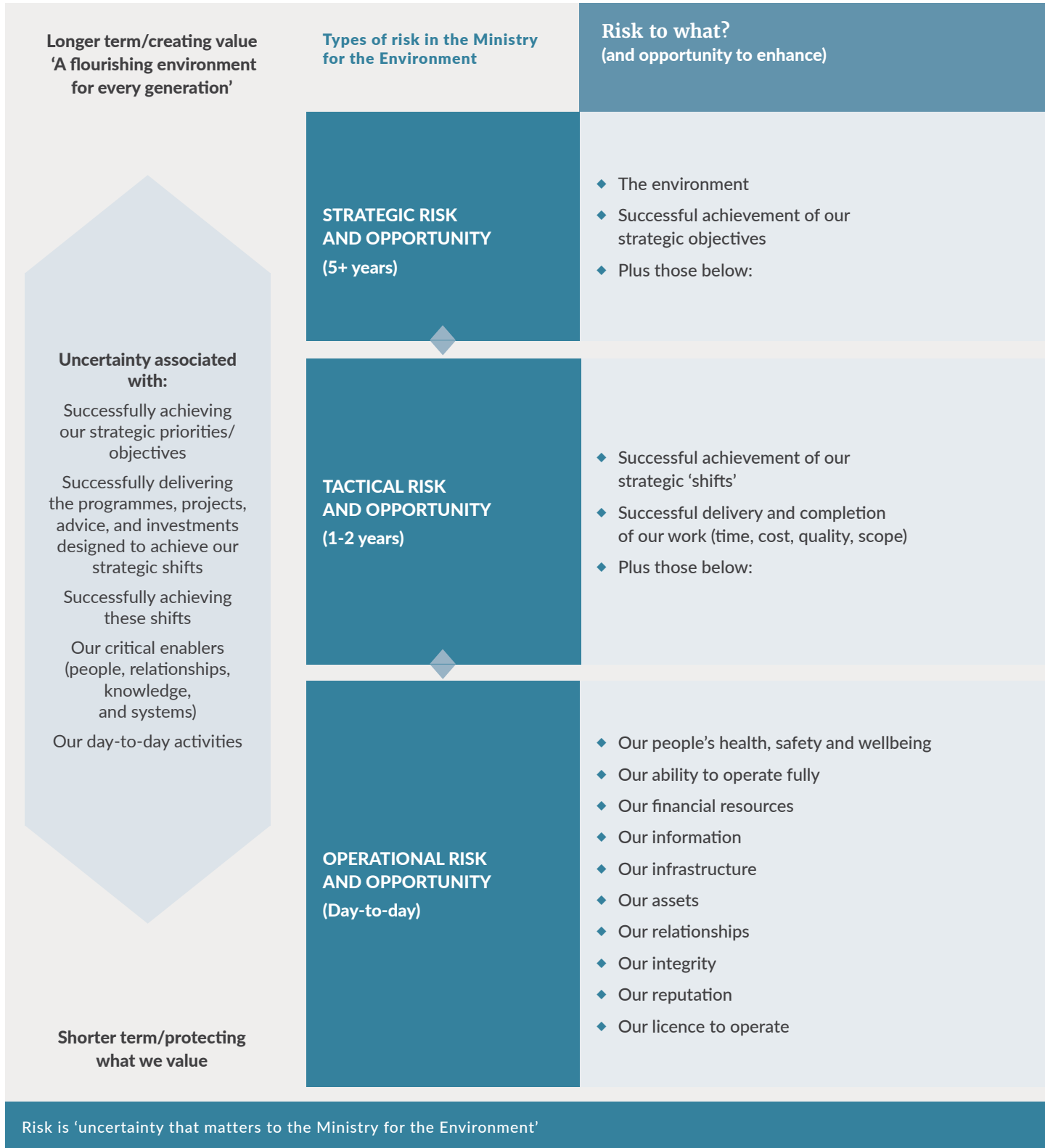
In the 2022/23 financial year we sought to further strengthen our risk management practices through:

- ◆ revising the existing risk and assurance structure to determine whether it is appropriate to meet the Ministry's needs
- ◆ reviewing the resourcing of the risk, assurance and resilience function and conducting targeted recruitment to ensure the right skills and experience are being leveraged to support the Ministry
- ◆ assessing risk management practices against good practice expectations to identify areas where investment is required.

In the 2023/24 financial year, we will review opportunities and integrate our:

- ◆ new processes for identifying, assessing and managing climate-related risks, once formalised, into our revised risk management approach and processes
- ◆ climate-related risks into our broader risk register.

**FIGURE 4: AN OVERVIEW OF OUR RISK MANAGEMENT FRAMEWORK, INCLUDING WHO IS RESPONSIBLE AND THE TOOLS AND PROCESSES USED TO MANAGE EACH TYPE OF RISK**





Who manages risk? (Who is responsible?)	How do they manage it? (Tools, policies, processes, behaviours, strategies)	Who oversees and monitors it? (Governance)
<ul style="list-style-type: none"> <li>◆ Secretary for the Environment and Chief Executive</li> <li>◆ Deputy Secretaries</li> </ul>	<ul style="list-style-type: none"> <li>◆ Strategic planning and monitoring</li> <li>◆ Informed decision-making (understanding trade-offs between reward and risk, or 'risk appetite')</li> <li>◆ Scenario planning</li> <li>◆ Horizon scanning</li> <li>◆ Performance measurement</li> </ul>	<ul style="list-style-type: none"> <li>◆ Te Pūrengi</li> <li>◆ Te Mīmiro</li> <li>◆ Audit and Risk Committee</li> </ul>
<ul style="list-style-type: none"> <li>◆ Directors Group</li> <li>◆ Business Groups (directors, managers, and teams)</li> <li>◆ Programme managers</li> <li>◆ Project managers and teams</li> </ul>	<ul style="list-style-type: none"> <li>◆ Business planning and monitoring</li> <li>◆ Quality standards and controls</li> <li>◆ Programme/project management</li> <li>◆ Stakeholder management</li> <li>◆ Informed decision-making</li> <li>◆ Performance measurement</li> <li>◆ Financial planning and management</li> <li>◆ Risk assessments</li> <li>◆ Fit-for-purpose processes and controls</li> </ul>	<ul style="list-style-type: none"> <li>◆ Te Pūrengi</li> <li>◆ Te Mīmiro</li> <li>◆ Programme/project governance bodies</li> <li>◆ Audit and Risk Committee</li> </ul>
<ul style="list-style-type: none"> <li>◆ Organisational performance (design, controls, processes, and policies)</li> <li>◆ Everyone in the Ministry for the Environment</li> </ul>	<ul style="list-style-type: none"> <li>◆ Compliance with policies (including Te Iwituroa), procedures, delegations, legislation, internal controls, and processes</li> <li>◆ Advice and support from corporate and support teams</li> <li>◆ Financial management</li> <li>◆ Contract management</li> <li>◆ Stakeholder management</li> <li>◆ Risk assessments</li> <li>◆ Business continuity management</li> <li>◆ Performance measurement</li> <li>◆ Fit-for-purpose facilities</li> </ul>	<ul style="list-style-type: none"> <li>◆ Te Pūrengi</li> <li>◆ Te Mīmiro</li> <li>◆ Audit and Risk Committee</li> </ul>



# Metrics and Targets

## Metrics used to assess climate-related risks and opportunities

We are committed to measuring and monitoring:

- ◆ our overall emissions profile
- ◆ our operational emissions and related activity, such as travel behaviour and electricity consumption
- ◆ the resilience of our operations to the impacts of climate change.

### Measuring our emissions profile

We measure our Scope 1, Scope 2 and Scope 3 emissions in accordance with the Greenhouse Gas Protocol and ISO 14064-1:2018 standard. Our emissions boundary covers all of our business groups and staff, and our emissions profile is publicly reported and externally verified. It also meets the expectations of the Carbon Neutral Government Programme.

We have achieved Toitū Envirocare's *carbonreduce* certification annually since 2018 and this is available on [Toitū's website](#).

### Measuring our operational emissions and related activity

We measure and monitor all business-related travel, which is our greatest source of emissions. We also measure and have reduced our electricity consumption, waste to landfill, and use a low-emissions procurement framework to choose low-emissions, low-waste office supplies.

A regular meeting between our sustainability, finance and facilities teams ensures we take an integrated approach to monitoring and evaluating our emissions, including the financial resources required to perform these tasks. We will also meet regularly with our colleagues in Stats NZ, with whom we share our office building in Wellington.

### Monitoring the resilience of our operations to the impacts of climate change

We continue to focus our efforts on changing our travel behaviour, optimising how we work remotely, and assessing the best low-emissions transport options for our regional work. Our operational resilience continues to be at the forefront of our minds, particularly with our remote and regional presence.

We monitor our travel risks and have developed a staff travel plan to identify emissions-reduction opportunities. We need to continue growing our capability to measure and monitor the climate-related risks and opportunities of our wider operational activity, particularly in our implementation areas.

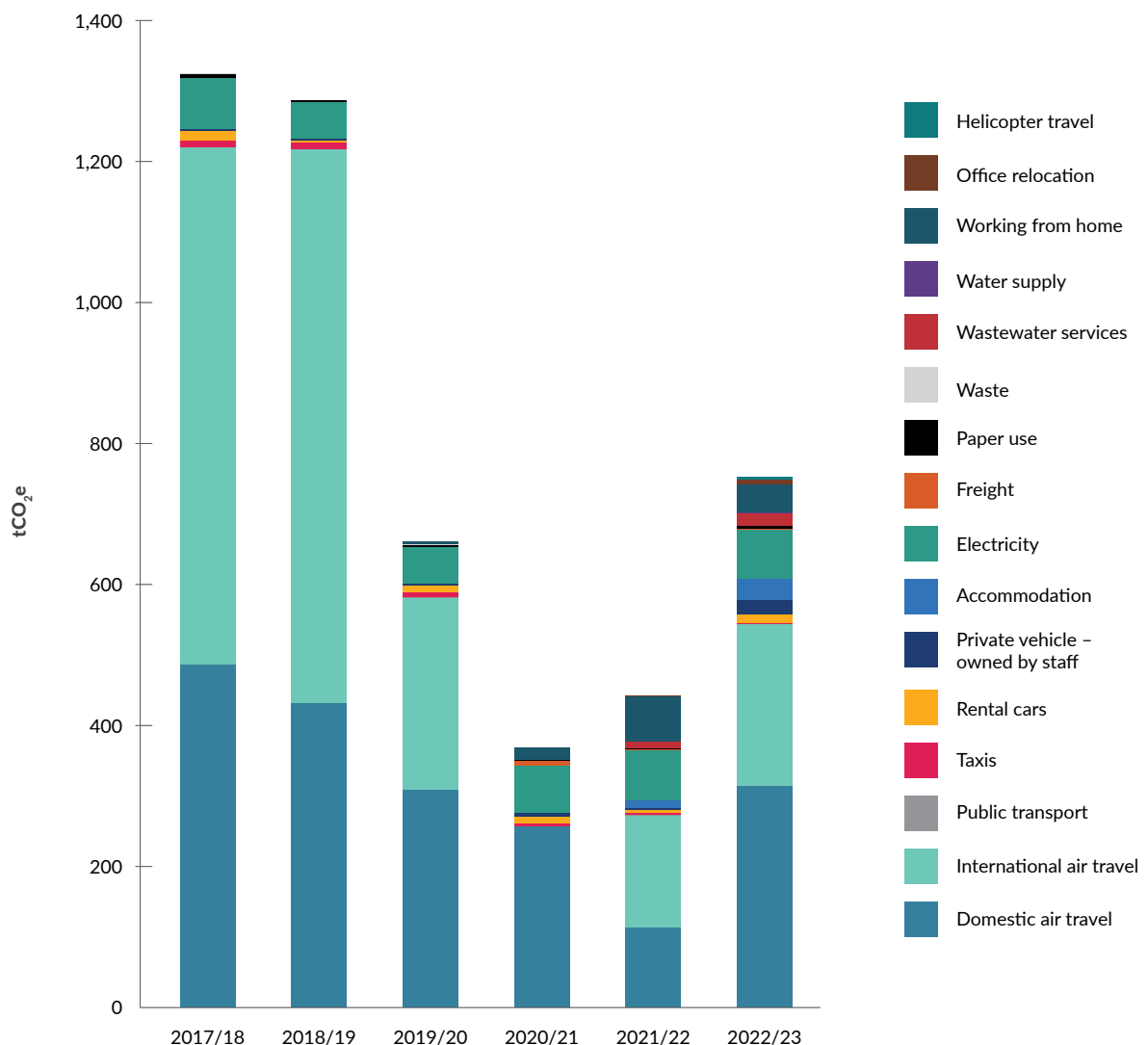
In the 2023/24 financial year we are committed to:

- ◆ incorporating our metrics and targets into a monitoring plan that addresses the roles and responsibilities for monitoring, evaluation and learning actions, and the roles allocated to external partnerships
- ◆ developing our technical capability to monitor travel emissions in real-time to empower staff to change their travel behaviour, relative to our overall travel emissions budget
- ◆ integrating our structures, policies and processes for monitoring climate-related risks and opportunities into our overall risk and performance monitoring processes.

## Our greenhouse gas emissions and related risks

In the 2022/23 financial year, we emitted 752.33 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e), which is a 69.84 per cent increase on the previous year (442.97 tCO<sub>2</sub>e), and 43.18 per cent lower than our base year 2017/18 (1,324.12 tCO<sub>2</sub>e). Our emissions have increased on the previous year, in part due to no COVID-19 travel restrictions in the 2022/23 financial year.

**FIGURE 5: TOTAL EMISSIONS (tCO<sub>2</sub>e) BY ACTIVITY, 2017/18 - 2022/23**

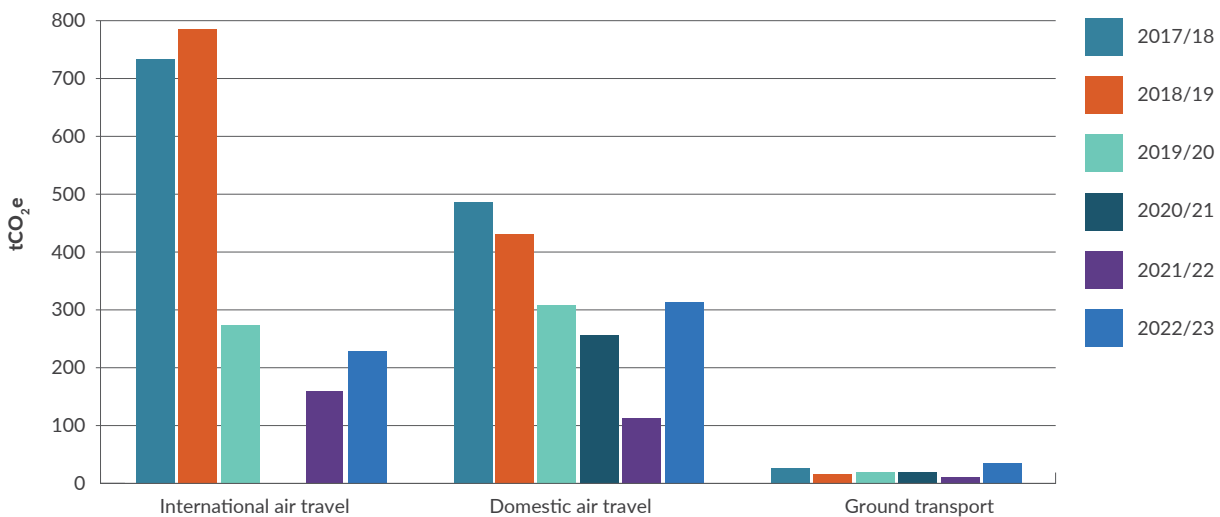


The bulk of our emissions come from international and domestic air travel. However, due to the introduction of our new travel policy, we have seen a significant reduction in international travel emissions from business class on previous years. One anomaly this year was helicopter travel supporting the Ministerial Inquiry into Land Use in Tairāwhiti and Wairoa.

During the 2022/23 financial year, we continued to consciously reduce our travel emissions and promote sustainable travel options by:

- ◆ guiding staff on sustainable travel options and behaviours
- ◆ making best use of our improved video conference technology for working remotely and meeting stakeholders around the country
- ◆ setting internal carbon emissions budgets, alongside financial budgets
- ◆ providing a low-emissions fleet of an e-bike, bikes and scooters for staff to attend meetings.

**FIGURE 6: TOTAL TRANSPORT EMISSIONS (tCO<sub>2</sub>e), 2017/18 - 2022/23**



While emissions from taxis reduced this year, rental and private car usage increased 370 per cent, and use of public transport remains low. In the 2023/24 financial year we will review work programme demand and reasons for staff travel choices and look for improvements on existing support measures for low emissions ground transport use.

Despite growing our full-time equivalent (FTE) staff numbers over the past six years, our overall greenhouse gas emissions per FTE have decreased from 3.68 tCO<sub>2</sub>e per FTE in 2017/18, to 0.77 tCO<sub>2</sub>e in the 2022/23 financial year.

## Targets used to manage climate-related risks and opportunities and performance against our targets

We have set the following targets:

Emissions:

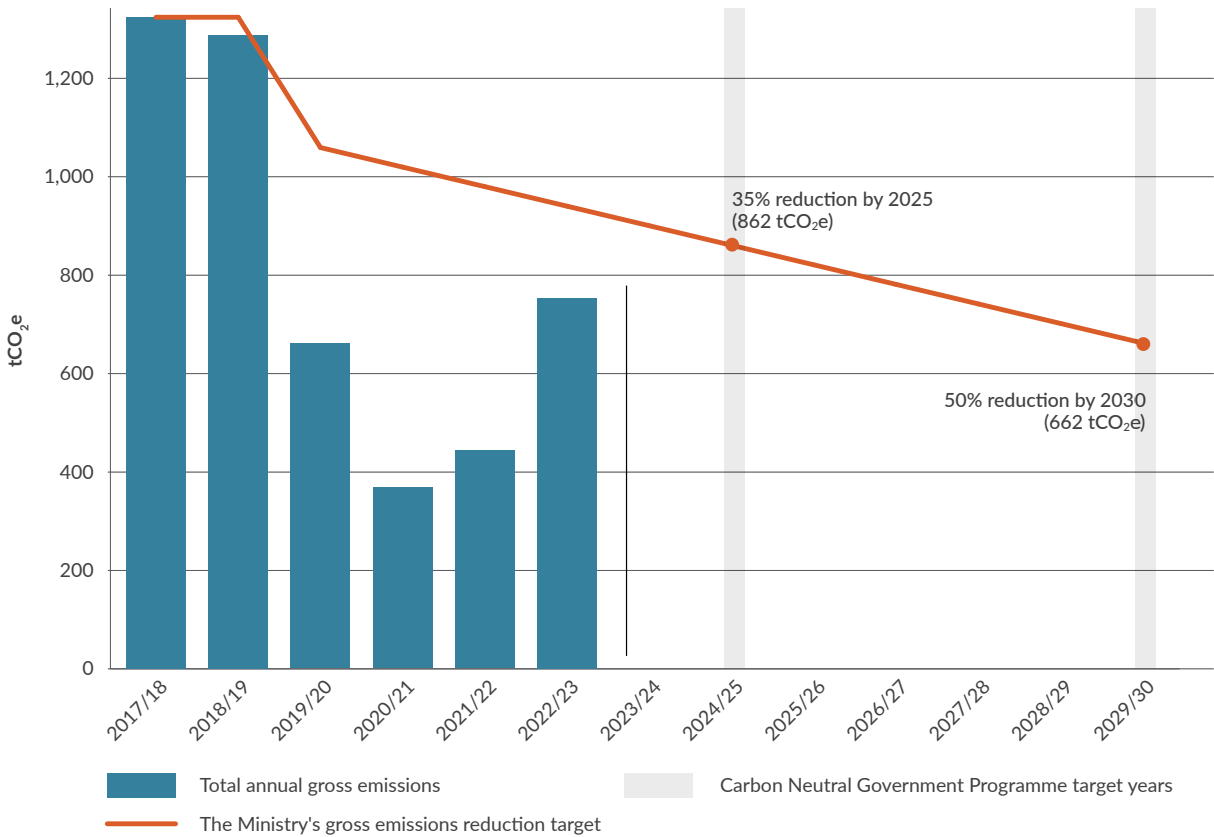
- ◆ 2025 target: reduce emissions by 35 per cent from the 2017/18 base year by 2025
- ◆ 2030 target: halve emissions from the 2017/18 base year in 2030, in line with reducing global warming by 1.5 degrees Celsius.

Waste:

- ◆ reduce our waste to landfill from our head office by 70 per cent by 2025.<sup>12</sup>

<sup>12</sup> This is from a 2017/18 baseline. We will set and measure new baseline targets in our new head office building in Wellington in the 2023/24 financial year.

**FIGURE 7: ANNUAL EMISSIONS REDUCTION PERFORMANCE (tCO<sub>2</sub>e), 2017/18 – 2029/30**



Our **Sustainability Strategy for 2022–2025** details these targets and goals for sustainability across the Ministry.



Ministry for the  
**Environment**  
*Manatū Mō Te Taiao*



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

**HEAD OFFICE**

8 Willis Street  
Wellington  
New Zealand

**POSTAL ADDRESS**

PO Box 10362  
Wellington 6143  
New Zealand

**TELEPHONE AND EMAIL**

Freephone: 0800 499 700  
Telephone: +64 4 439 7400  
Email: [info@mfe.govt.nz](mailto:info@mfe.govt.nz)

**WEBSITE**

[environment.govt.nz](http://environment.govt.nz)