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Office of the Minister for the Environment

DEV - Cabinet Economic Development Committee

Emissions reduction plan: waste and F-gases work programme

Proposal

- 1 This paper seeks agreement on programmes of work to address recommendations 23.1 and 23.2 by the Climate Change Commission in its report *Ināia tonu nei: A low emissions future for New Zealand* (as outlined in appendix 1), and achieve reductions in:
 - biogenic methane emissions from waste
 - emissions from fluorinated gases (F-gases)
- 2 I propose to include these programmes of work in the waste and F-gases chapters of New Zealand's inaugural emissions reduction plan.

Relation to government priorities

- 3 The Government declared a climate change emergency on 2 December 2020. Cabinet agreed that climate change "demands a sufficiently ambitious, urgent, and coordinated response across government to meet the scale and complexity of the challenge" [CBC-20-MIN-0097 refers].
- 4 Enabling a just transition to a low-emissions, climate resilient future is a government priority. Cabinet declared its intention to "put the climate at the centre of government decision-making" [CBC-20-MIN-0097 refers].
- 5 The proposals in this paper relate to the Cooperation Agreement between the Labour and Green Parties. Achieving the purpose and goals of the 'Zero Carbon' amendment to the Climate Change Response Act 2002 in 2019 is an agreed area of cooperation.

Executive Summary

- 6 This Cabinet paper seeks decisions on programmes of work to achieve reductions in biogenic methane emissions from waste and emissions from fluorinated gases (F-gases).¹
- 7 The waste chapter of the inaugural emissions reduction plan covers biogenic methane emissions from waste, to accord with how emissions are reported internationally, and the way in which the Climate Change Commission (the Commission) made its

¹ Fluorinated gases (F-gases) make up 2.5 per cent of New Zealand's total emissions. Of this, 92 per cent come from hydrofluorocarbon (HFC) refrigerants used in heating and cooling equipment, from large industrial refrigeration systems to domestic heat pumps and car air-conditioners.

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recommendations. Initiatives to decrease biogenic methane emissions from waste are a sub-set of my wider waste reduction work programme [CAB-21-MIN-0181]. Many of these other initiatives may also reduce emissions elsewhere in the economy (or internationally).

8 I propose the chapters on waste and F-gases include investment, regulatory and collaborative actions to address the Commission's recommendations, including:

Waste

8.1 investment of [REDACTED] and where applicable, green waste; resource recovery for construction and demolition waste materials; a national resource recovery network; consumer and business behaviour change campaigns; and data improvements

8.2 proposals for:

8.2.1 collection of food waste from households and businesses [CAB-22-MIN-0041 refers]

8.2.2 new legislation and regulations to support a national licensing scheme

8.2.3 future regulatory changes to better manage greenhouse gas emissions from landfills

8.2.4 future legislation and regulation to establish obligations for households, businesses, collectors, disposal facilities and others to separate out specified organic materials to increase beneficial re-use and reduce emissions associated with disposal, including food scraps and garden waste, paper and cardboard, and construction and demolition waste such as timber.

8.3 collaborative work by the Ministry for the Environment, the Ministry for Business, Innovation and Employment, and the Ministry for Primary Industries to identify and implement further cross-sector opportunities to reduce construction and demolition waste.

F-gases

8.4 regulatory proposals to prohibit import of pre-charged equipment containing high global warming potential (GWP) F-gases (if alternatives are available)

8.5 implementing regulatory proposals for appropriate training and accreditation to ensure the safety of workers servicing equipment that use F-gases for heating and cooling (including more-flammable low GWP F-gases)

8.6 developing future regulatory proposals to prohibit the sale and use of high GWP F-gases used for servicing, where alternatives are available and provisions for ensuring worker safety have been made

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8.7 collaborative work by the Ministry for the Environment with relevant agencies on additional opportunities to reduce emissions through whole-of-life management and design options.

9 A Budget 2022 CERF bid has been submitted to enable the progression of this work.

Background

10 Parliament enacted the Climate Change Response (Zero Carbon) Amendment Act in late 2019. This introduced a framework to manage New Zealand's transition to a low-emissions and climate-resilient future, including establishment of the Climate Change Commission), emissions budgets, and an emissions reduction plan.

11 On 31 May 2021, the Commission provided the Government with its final advice on emissions budgets and recommended policy direction for the emissions reduction plan. New Zealand must publish its first emissions reduction plan by 31 May 2022.

12 Emissions budgets need to set Aotearoa New Zealand up to:

- reduce biogenic methane emissions by at least ten per cent by 2030 and by 24 to 47 per cent by 2050 and beyond, compared to 2017 levels
- reduce emissions of greenhouse gases, other than biogenic methane, to net zero by 2050 and beyond.

13 Agriculture and waste are the two main sources of biogenic methane, accounting for 91 per cent and 9 per cent respectively. The waste chapter covers biogenic methane emissions from waste, to accord with how emissions are reported internationally, and the way in which the Commission made its recommendations.

14 The Commission recommendations 23.1 and 23.2 relate to waste and F-gases respectively. These recommendations are set out in full in Appendix 1, along with the proposed approach to incorporating them.

15 Cabinet has agreed to the following sector sub-targets for the first emissions budget (2022-2025) [CAB-21-MIN-0547.02 refers] (table 1). Baseline projections indicate these emissions budgets will be exceeded without further intervention.

Table 1: Emissions budgets and baseline projections for reductions in greenhouse gas emissions from waste and F-gases (all gases, net, expressed in MtCO₂-e, AR5 terms)²

Sector	First emissions budget (2022-2025)	Second emissions budget (2026-2030)	Third emissions budget (2031-2035)
Waste emissions budget sub-sector target	13.7 MtCO ₂ -e	14.9 MtCO ₂ -e	12.7 MtCO ₂ -e
Waste projected baseline emissions	14.2 MtCO ₂ -e	17.5 MtCO ₂ -e	17.4 MtCO ₂ -e

² All emissions values in this paper are expressed using GWP100 values from the IPCC's Fifth Assessment Report (AR5) for consistency with international obligations relating to Inventory reporting. Note that data on emissions from all landfills is currently not complete. As we gain further data, there is potential that the emissions reported from waste may increase or decrease (for example, as we gain more information on emissions from other landfill classes).

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F-gases emissions budget sub-sector target	6.8 MtCO ₂ -e	7.5 MtCO ₂ -e	5.9 MtCO ₂ -e
F-gases projected baseline emissions	7.2 MtCO ₂ -e	8.2 MtCO ₂ -e	7.2 MtCO ₂ -e

- 16 The Government consulted on the discussion document *Te hau marohi ki anamata – Transitioning to a low-emissions and climate-resilient future* between 13 October and 24 November 2021. Over 10,000 submissions were received. Over 500 people attended webinars and workshops covering waste and F-gas proposals.
- 17 My proposals for waste and F-gases incorporate the results of this public consultation.

Analysis

Measures to reduce biogenic methane emissions from waste

- 18 The Commission's overarching recommendation to achieve emissions reductions from waste and F-gases (recommendation 23) was to revise the waste strategy so it will deliver emissions reductions in the waste sector. A range of more detailed recommendations are outlined for waste and F-gases in recommendations 23.1 and 23.2 respectively (see Appendix 1).
- 19 Cabinet has already agreed a work programme for waste and resource efficiency that will help move New Zealand to a low-emissions circular economy [CAB-21-MIN-0181].
- 20 Consultation on a new waste strategy [CAB-21-MIN-0402 refers] concluded on 10 December 2021. I propose to bring a revised waste strategy to Cabinet in mid-2022, to meet the Commission's provisional progress indicator 1(a).³ This strategy will cover a wide range of measures to reduce waste.
- 21 The proposed waste strategy will establish a high-level vision and aspirations for a low-waste New Zealand by 2050, supported by shorter-term targets (including a target for biogenic methane reductions).⁴ While this will establish the overall aspiration and direction, I propose the emissions reduction plan include more detailed content on how we will achieve waste and F-gas emissions reductions.
- 22 Proposed measures to reduce emissions from waste are generally well-supported. Feedback at consultation events and submissions indicated strong support for moving to a more circular economy, including interventions at the top and middle of the waste hierarchy.⁵ Stakeholders also supported the need for better data and reporting.
- Subject to funding [refer to Financial Implications section], my proposed response will:

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³ Climate Change Commission Recommendation 23, provisional progress indicator 1: Government to have, by 31 December 2022, finalised the revised waste strategy with goals to: a. reduce biogenic methane waste emissions to at least 40% below 2017 levels by 2035.

⁴ The proposed waste strategy target is to reduce biogenic waste methane emissions by at least 30 per cent by 2030, which is an extrapolation of the Commission's recommended reductions to be achieved (at least 40 per cent below 2017 levels by 2035).

⁵ The waste hierarchy is a tool used globally for explaining the different steps to reduce and manage waste. The most desirable steps are those at the top of the hierarchy, which avoid generating waste in the first place. In the middle are techniques for keeping materials circulating in the economy. At the bottom are the techniques that are least desirable – destruction and disposal to landfill.

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- improve our knowledge base
- build the systems needed to keep materials cycling in the economy (not generating emissions in landfill)
- ensure appropriate legislative and regulatory tools to enable safe reduction and recovery of organic wastes including food and garden waste, paper and cardboard, and wood waste from construction and demolition activities.⁶

24 The main policy levers are investment; regulation; and collaboration.

25 These initiatives focus on reducing biogenic methane emissions from waste. A wider range of initiatives to transition us to a circular economy will be covered in the emissions reduction plan.

26 My proposed response generally aligns with the Commission's recommendations and achieves a similar level of abatement. However, it does represent a slight deviation from the Commission's recommended pathway, because officials consider that we do not yet have the data to set a date to mandate high performance gas capture systems for all landfill types that accept organic waste (Commission's recommendation 23.1.e and progress indicator 1(b)), so I propose to defer that action until further work is carried out on feasibility.⁷

Investment

27 Organic materials that are currently disposed of in landfills could become potential resources for the economy, such as compost, biogas and recycled products. Investment in recovering organic materials can reduce emissions and generate a range of benefits across the economy.

28 However, this will require substantial additional local government and private sector investment. Recent changes to increase and expand the waste disposal levy (waste levy) [CAB-21-MIN-0112] provide a potential funding source, but transitional Crown investment will be needed because levy revenue is not projected to reach its full level until 2025/26.

29 Shaping plans in line with the waste hierarchy (Commission's recommendation 23.1.c) will require action at both the top (eg, behaviour change campaigns to prevent organic waste⁸) and the middle of the hierarchy.

30 Areas of proposed investment include collection and processing infrastructure for food waste and where appropriate, green waste; resource recovery for construction and demolition waste materials; developing a national resource recovery network; consumer and business behaviour change campaigns to prevent organic waste; and improving our understanding of emissions from waste.

⁶ Construction and demolition waste is a component of the building and construction sector. Other parts of the building and construction sector also affect emissions, including designing out waste, and choices about the types and quantities of materials that are used.

⁷ Climate Change Commission provisional progress indicator: 1. Government to have, by 31 December 2022, finalised the revised waste strategy with goals to: b. Ensure, by 31 December 2026, that all landfills (except farm fills) that accept organic waste have effective gas capture systems.

⁸ Alignment with other top of the hierarchy initiatives will be important especially where significant co-benefits occur such as the Ministry for Social Development's food rescue work supporting social outcomes.

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31 The Ministry for the Environment proposes to improve knowledge on a range of matters that affect emissions from disposal of organic waste, and/or the likely effectiveness of potential interventions.⁹ Improved knowledge would better inform future policy development and is necessary before implementing the Commission's recommendation 23.1.e.

32 Further detail is outlined in the Financial Implications section of this paper.

Proposed regulation

33 I propose to present the review of the Waste Minimisation Act 2008 and the new waste strategy to Cabinet in mid-2022. This will provide additional regulatory tools.

34 I propose my programme of work include establishing regulatory requirements for:

34.1 kerbside collection of food waste for most communities (as part of standardising the system for kerbside recycling collections outlined in the Labour Government's manifesto)

34.2 specified businesses to ensure commercial food waste is separated for collection

34.2.1 Cabinet agreed in February 2022 to consultation on proposals 34.1 and 34.2 [CAB-22-MIN-0041 refers]. Implementation would be phased progressively from 2022 to allow sufficient lead in time for local government, communities, and businesses. Some parts of the implementation will rely on tools proposed to be established in new waste legislation (progressively from 2024).

34.3 new legislation and regulations to support a national licensing scheme for more effective regulation, administration and data collection of individuals and entities in the waste and resource recovery sector, including disposal facilities, waste transporters, exporters and resource recovery entities (in line with the Commission's recommendation 23.1.d(iv))

34.3.1 consultation on issues and options for new waste legislation took place from October – December 2021.

34.3.2 [REDACTED]

34.4 developing future legislation and regulations to establish obligations for households, businesses, collectors, disposal facilities and others to separate out specified organic materials to increase beneficial re-use and reduce emissions associated with disposal, including:

34.4.1 food scraps and garden waste

⁹ The NZ GHG inventory data has a range of +/- 140 per cent for landfills other than those that take household waste at present. Key areas of uncertainty include: the composition of materials (and associated emissions) being landfilled at different types of landfill sites and at farm fills; greenhouse gas emissions from landfills that do not have landfill gas capture systems in place, and the suitability of such sites for retrofitting landfill gas capture; what scope is there to manage challenging materials such as treated timber differently.

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34.4.2 paper and cardboard

34.4.3 construction and demolition waste, including timber.

35 Encouraging or requiring diversion to sorting facilities and/or separate collections of organic materials will reduce emissions and enable beneficial uses. For example, waste timber from construction and demolition could be a potential input into the bioeconomy. Food and garden waste can be turned into soil amendment products that can increase the productivity of agricultural soils, with potential to reduce emissions from synthetic fertiliser use.

36 The Commission also recommended that all landfills (except farm fills) that accept organic waste have effective gas capture systems by 31 December 2026.¹⁰ I propose to defer the decision until further feasibility work is carried out.

37 The Ministry for the Environment will develop future regulatory changes to better manage greenhouse gas emissions from landfills, by:

37.1 amending the National Environmental Standards for Air Quality to require landfill gas capture at all municipal (Class 1) landfills that receive organic material by 31 December 2026

investigating the requirement for:

37.2

37.2.1 landfill gas capture at a wider range of landfill sites that receive organic waste, and/or

37.2.2 banning specified organic materials from landfill by 2030.

38 Collectively, these proposed measures will put us on track to meet the Commission's provisional progress indicator of a 40 per cent reduction in biogenic methane emissions (from 2017 levels) by 2035.

39 However, the modelled reductions from the proposed measures fall slightly short of the agreed sector sub-target for waste. Current modelling shows that targets for reducing emissions from landfills require a suite of policies including bans on the disposal of certain organic materials to landfill. Decisions on this policy proposal will be deferred, as they require alternative disposal options, unlocked through proposed investment in waste infrastructure in emissions budget periods one and two, to be available prior to implementation.

40 The additional data collection outlined in this emissions reduction plan will also help identify future abatement opportunities in subsequent emissions budget periods (including potential abatements from improved management of wastewater, farm fills, and landfill emissions).

Collaboration

41 I propose collaborative work by the Ministry for the Environment, the Ministry for Business, Innovation and Employment, the Ministry for Primary Industries and the Ministry of Housing and Urban Development to identify and implement further cross-sector opportunities to reduce construction and demolition waste, including through

¹⁰ Recommendation 23.1.e and provisional progress indicator 1.b

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the Building for Climate Change programme, and work on the circular and bioeconomy strategy.

Measures to reduce F-gas emissions

42 F-gases make up 2.5 per cent of New Zealand's total emissions. Of this, 92 per cent come from hydrofluorocarbon (HFC) refrigerants used in heating and cooling equipment, from large industrial refrigeration systems to domestic heat pumps and car air-conditioners.

43 A range of measures are already in place or underway to reduce potential emissions from F-gases.¹¹ The scope of policy proposals focuses on HFCs to align with the Commission's recommendations and for maximising emissions reduction potential. The Commission recommended further work to expand import restrictions where feasible (recommendation 23.2.a); improve industry practice to reduce leakage (recommendation 23.2.b); and enable businesses and consumers to switch to low climate impact alternatives (recommendation 23.3.c).

I propose regulatory and non-regulatory measures including:

44

44.1 prohibiting imports of pre-charged equipment containing high global warming potential (GWP)¹² HFCs where alternatives are available, subject to further analysis and finance.

44.2 collaborative work by the Ministry for the Environment and WorkSafe to implement regulatory proposals for appropriate training and accreditation to ensure the safety of workers servicing equipment that uses F-gases for heating and cooling (including low GWP equipment)

44.3 developing future regulatory proposals to prohibit the sale and use of high GWP F-gases used for servicing, where alternatives are available and provisions for ensuring worker safety have been made

44.4 collaborative work by the Ministry for the Environment with relevant agencies including the Ministry of Building, Innovation and Employment and the Energy Efficiency and Conservation Authority on additional emissions reductions in whole-of-life management of, and design of products using, all refrigerants.

45 New Zealand is already phasing down the quantity of HFCs imported under the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer. The draft emissions reduction plan consultation sought feedback on a more rapid phase down. I no longer propose this approach, noting sector feedback that accelerating the phase-down would be technically challenging.

46 The Commission recommended improving industry practice to reduce leakage. Significant emissions reduction potential could be found in improving the management of equipment containing refrigerants. This view is shared by industry members,

¹¹ Existing measures include phasing down HFCs imported in bulk, in line with our obligations under the Kigali Amendment to the Montreal Protocol; applying a Synthetic Greenhouse Gas Levy to imports of finished goods and vehicles containing HFCs or perfluorocarbons (PFCs); requiring regulated product stewardship for refrigerants, including a potential regulatory requirement for producers and sellers of products containing refrigerants to join an accredited scheme.

¹² Global warming potential (GWP) is a measure of how much energy the emissions of one tonne of a gas will absorb over a given period of time, relative to the emissions of one tonne of carbon dioxide. It shows the relative harm of different types of gases, and the warming impact of their emissions

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although they were also concerned about health and safety implications, due to the higher flammability and thus risk associated with lower GWP gases.

- 47 The Commission also recommends developing support for businesses and consumers to switch to low climate impact alternatives. The regulatory mechanisms proposed above will further support this transition by signalling a shift away from reliance on high GWP HFCs. In addition, the Ministry will seek technical feedback on non-regulatory support mechanisms industry may need to support a transition to low climate impact alternatives, and on support mechanisms needed to ensure low-income households continue to have access to cost-effective heating and cooling options.

Electric vehicle battery management

- 48 The Commission recommended measures to accelerate emissions reductions from the light vehicle fleet, including a recommendation to encourage battery refurbishment, repurposing and recycling systems, working with the private sector (recommendation 18.3.d). This recommendation sits within the waste portfolio.
- 49 Regulatory proposals for a large battery product stewardship scheme (ie, for electric vehicle batteries) were consulted on between 4 November and 16 December 2021. I intend to bring a summary of submissions to Cabinet in May 2022.
- 50 Early indications are that further work will be necessary before bringing the regulatory proposals for a large battery product stewardship scheme to Cabinet later in 2022.

Implementation

- 51 A dedicated organic waste infrastructure fund is proposed to implement the emissions reduction plan waste work programme [subject to funding through the Climate Emergency Response Fund]. This initiative seeks to unlock transformational investment by councils and the private sector within the first emissions budget period (and beyond).
- 52 The Ministry for the Environment already administers a number of funds, including the Waste Minimisation Fund and COVID-19 Response and Recovery Fund waste minimisation and resource recovery initiatives. The purpose of these funds is set by statute and/or outlined in appropriations. Some of the measures funded through these initiatives will help reduce emissions, but others will focus on other aspects of waste minimisation.
- 53 The scale of these investments will grow considerably if the proposed funding from the Climate Emergency Response Fund is also received. Work is already underway to ensure waste levy revenue is invested strategically. This will also be used to ensure the expanded investment responsibilities will be delivered effectively.

Financial Implications

- 54 The expansion of the waste levy will provide future funding opportunities for both central and local government. However, I am also seeking funding through the Budget 2022 Climate Emergency Response Fund process, because the waste levy revenue¹³

¹³ Other priorities for waste levy expenditure include allocation to territorial authorities, who currently receive 50 per cent of levy revenue; the \$50 million Plastics Innovation Fund; product stewardship, avoiding food waste, including food rescue, and infrastructure for the recovery or recycling of inorganic materials and products such as batteries, plastics, textiles, metals and glass.

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is insufficient to deliver the modelled emissions abatement needed in emissions budget period 1.

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- 55.1 a dedicated fund to deliver national resource recovery and kerbside collection infrastructure¹⁴, collecting and processing organic waste over the next four years
- 55.2 consumer and business behaviour change programmes to reduce organic waste
- 55.2 development of a supporting evidence base and regulatory changes to be implemented under the new waste legislation
- 55.3 a national data collection and reporting programme on emissions reductions from waste, including landfill gas capture feasibility studies.
- 55.4

56 Investment in all of these areas is required to deliver on the waste biogenic methane emissions reduction target.

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58 Modelling indicates a one-year delay in implementation (from 2022 to 2023) would reduce the policies' impact by up to 60 per cent in the first emission budget period. This is because it would delay building foundational recovery systems to prevent organic waste from being created or from entering landfill. Any organic waste that is disposed of in a landfill generates ongoing emissions over the lifetime of the landfill, even if a landfill gas capture system is in place.

Legislative Implications

- 59 Legislative and regulatory changes will be required to implement proposals contained within the final emission reduction plan. Drafting approval for legislative amendments will be sought for these proposals through related policy papers on specific policies.
- 60 I received a slot on the Legislation Programme for 2021 (category 5 priority) for new waste legislation, which will be required to implement some of my work programme. I have a bid in progress for the 2022 legislation programme.

Impact Analysis

Regulatory Impact Statements

- 61 My proposed package of work for waste and F-gases includes proposals that are supported by regulatory impact analysis, including:
 - 61.1 requirements for collections of food waste from households and businesses – consultation on these proposals will take place from March to April 2022.

¹⁴ Resource recovery and processing infrastructure includes targeted investment for construction and demolition waste.

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Interim regulatory impact analysis was included in papers I tabled in February 2022 – CAB-22-MIN-0041 refers.

- 61.2 new legislation and regulations to support a national licensing scheme for more effective regulation, administration, and data collection – an interim RIS is included at appendix 2
- 61.2.1 The Ministry for the Environment's Regulatory Impact Analysis Panel has reviewed the draft Regulatory Impact Summary (RIS) document "National licensing system in waste and resource recovery". The panel considers the document partially meets the quality assurance criteria for regulatory impact analysis.
- 61.2.2 The panel considers the paper clearly sets out the options available to Ministers, and illustrates trade-offs and opportunity costs. The paper outlines the known impacts, and the consultation process will identify likely impacts of the proposals on stakeholders.
- 61.3 prohibiting import of pre-charged equipment containing high GWP F-gases (if alternatives are available) – an interim RIS is included at appendix 3
- 61.3.1 The Ministry for the Environment's Regulatory Impact Assessment Panel has reviewed the Regulatory Impact Statement "Options to manage imports of finished products containing HFC refrigerants". The Panel confirms that the level of information provided meets the quality assessment criteria for this stage in the process.
- 61.4 ensuring effective regulation of health and safety risks associated with work on commercial and industrial refrigeration, heat pump and air conditioning systems (regulated through WorkSafe [DEV-19-MIN-0105 refers]).
- 62 Some areas of future regulation first require more preparation. I am proposing that the Ministry for the Environment develop future legislative and/or regulatory changes, which will be supported by accompanying regulatory assessment, to:
- 62.1 better manage greenhouse gas emissions from landfills – as outlined at paragraph 37 above
- 62.2 establish duty of care obligations to better manage paper and cardboard and construction and demolition waste including timber. These obligations would also be used to implement some of the proposals for food waste referred to in paragraph 61.1.
- 62.3 prohibit the sale and use of high GWP F-gases used for servicing, where alternatives are available and provisions for ensuring worker safety have been made.

Climate Implications of Policy Assessment

- 63 The Climate Implications of Policy Assessment (CIPA) team has been consulted and confirms that the CIPA requirement applies to this package of proposals as a key objective is to reduce emissions. However, a full quantitative CIPA disclosure has not been provided at this time as the impact of specific policies within this paper are highly dependent on future decisions around specific policy design and enabling level of investment.

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64 A high level of emissions reductions is required from baseline projected emissions in order to meet emissions budget sector sub-targets, as outlined in table 1.

65 The proposals in this paper to address emissions from F-gases – alongside an increasing NZ ETS price – have not yet been able to be quantified but are likely to result in significant emissions reductions. Existing modelling of regulated product stewardship indicates that F-gas emissions will be on track to achieve the level of emissions reductions in the Commission’s demonstration pathway.

66 Indicative scenario modelling indicates that the package of measures for waste proposed in this paper could result in emissions reductions of 0.4, 2.5 and 4.3 MT CO₂-e across the first three emissions budgets. This reduction in emissions is largely attributed to the diversion of organic waste from landfills to resource recovery infrastructure and low-emissions processing facilities. This also assumes that landfill gas capture systems can be improved and expanded to more existing landfills over time.

67 Diverting materials away from landfills will also have substantive co-benefits, some of which would be expected to have indirect impacts on emissions reductions. These co-benefits have not been quantified and may mean that the net emissions reduction estimates are understated. Co-benefits include displacing of fossil gas with biogas, displacing embodied emissions of new construction material with recovered material, and increased soil carbon and reduction in use of artificial fertiliser through application of compost.

Current estimates are subject to a high level of uncertainty. More detailed modelling will be developed as individual measures are progressed, and full CIPA disclosure will be provided to Cabinet as appropriate. Work to improve waste data will be important for informing future policy measures and managing the achievement of emission budgets.

68

Population Implications

69 The emissions reduction plan will include information on the distributional impacts of policies and measures within the scope of the plan, including a response to the Commission’s recommendation to develop a comprehensive Equitable Transition Strategy.

70 Some population groups, including many disabled people, may be less likely than others to be able to afford any additional costs associated with changes to how waste materials are managed. Some may also be less likely to be able to participate in or meet requirements of some aspects of the proposed changes.

71 Consultation feedback highlighted that low-income households often face the most barriers to reducing waste. Submitters wanted more support for low-income households from both local and central government. I propose to incorporate this feedback into programmes to support households and business to avoid waste, which will support them to manage or offset the impacts of increasing disposal costs.

72 Consultation feedback also identified the need for waste minimisation services to be available in both rural and urban environments. Some submitters were concerned that a lack of suitable facilities would result in illegal dumping. As noted, I am seeking funding in Budget 2022 to enable communities to access suitable resource recovery infrastructure. Proposals to improve household kerbside recycling should lead to increased access to services across communities (regardless of income level).

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- 73 There is some scope for employment opportunities in the waste sector to help mitigate employment impacts elsewhere in the economy. The Commission identified that there will be more opportunities for jobs in the circular economy and bioeconomy. Resource recovery and recycling typically offer greater employment opportunities than traditional waste disposal activities.

Te Tiriti o Waitangi

- 74 Te Tiriti o Waitangi obliges the Crown work together with iwi and hapū in good faith to ensure our climate emergency response recognises Māori tino rangatiratanga, kaitiakitanga and the kāwanatanga of the Crown. More detailed analysis of Tiriti obligations in the context of the emissions reduction plan is outlined in the Cabinet paper 'Emissions reduction plan: Te Tiriti o Waitangi and the role of Māori in the transition' [CAB-98].

- 75 The Commission recommended (23.1a) that the revised waste strategy include acting in partnership with iwi/Māori, giving effect to the principles of Te Tiriti o Waitangi and aligning with the Treasury's He Ara Waiora framework.

- 76 Developing strong collaborative relationships and ways of working with iwi/Māori is identified as a priority in the draft waste strategy, as a component of the foundations for transformational change. New legislation also creates an opportunity to significantly increase the participation of Māori in decision-making processes for the waste sector.

Ongoing work is needed in this area to give effect to the Commission's recommendation.

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Human Rights

- 78 There are no inconsistencies between these proposals and the New Zealand Bill of Rights Act 1990 or the Human Rights Act 1993.

Consultation

- 79 The following agencies were consulted in the development of this paper: Ministry for Business, Innovation and Employment; the Treasury; Ministry of Foreign Affairs and Trade; Ministry for Primary Industries; Energy Efficiency and Conservation Authority; Ministry of Social Development; Ministry of Transport; Waka Kotahi – New Zealand Transport Agency; Te Tūāpapa Kura Kāinga – Ministry of Housing and Urban Development; Te Puni Kōkiri; WorkSafe; Te Arawhiti. The Department of Prime Minister and Cabinet was informed.

- 80 Public consultation on the emissions reduction plan discussion document took place between 13 October and 24 November 2021 [CAB-21-MIN-0335 refers].

- 81 Feedback from consultation has been incorporated into my proposals. Most submitters supported the Commission's provisional indicator to reduce waste biogenic methane emissions by 40 per cent by 2035.¹⁵ Most submitters supported the proposals for limiting emissions from landfills, although many felt the overall focus should be more broadly on avoiding the creation of all kinds of waste.

¹⁵ 87 per cent of the 170 Citizen Space submitters who answered this question supported reducing waste biogenic methane emissions by 40 per cent from 2017 levels by 2035.

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- 82 The Ministry for the Environment is developing a communications plan for announcements relating to the emissions reduction plan in early 2022, dependent on Cabinet decisions and aligning with announcements on Budget 2022.

Proactive Release

- 83 I propose that this paper is proactively released on the Ministry for the Environment's website after the emissions reduction plan and emissions budgets have been agreed and published in 2022, subject to appropriate redactions under the Official Information Act 1982.

Recommendations

The Minister for the Environment recommends that the Committee:

- 1 **note** that the Climate Change Commission provided the Government with its final advice on emissions budgets and the recommended policy direction of the emissions reduction plan on 31 May 2021;
- 2 **note** that proposals for waste and F-gases have been revised following incorporation of public feedback on *Te hau mārohi ki anamata – Transitioning to a low-emissions and climate-resilient future*, which took place from 13 October and 24 November 2021;
- 3 **note** Cabinet has agreed to the following sector sub-targets for waste and F-gases for emissions budget #1 [CAB-21-MIN-0320.01 refers]:

Sector (All gases, net (AR5) expressed in MtCO ₂ -e)	First emissions budget (2022-2025)	Second emissions budget (2026-2030)	Third emissions budget (2031-2035)
Waste	13.7	14.9	12.7
F-gases	6.8	7.5	5.9

- 4 **note** that the programme of work to achieve reductions in biogenic methane emissions will improve our knowledge base; build the systems needed to keep materials cycling in the economy (not generating emissions in landfill); and ensure we have appropriate legislative and regulatory tools in place;
- 5 **agree** that the programme of work in the inaugural emissions reduction plan to achieve reductions in biogenic methane emissions from waste in line with the Climate Change Commission's recommendations includes:
 - a. subject to Budget decisions, investment in:
 - i) collection and processing infrastructure for food waste, and where appropriate green waste
 - ii) resource recovery for construction and demolition waste materials
 - iii) a national resource recovery network
 - iv) consumer and business behaviour change campaigns to reduce organic waste

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- v) improving information on greenhouse gas emissions from waste disposal, noting the current very high level of data uncertainty in some areas
- b. developing regulatory proposals [CAB-22-MIN-0041 refers] for:
 - i) kerbside collection of food waste for most communities
 - ii) separation of commercial food waste for collection from specified businesses
- c. developing new legislation and regulations to support a national licensing scheme for more effective regulation, administration and data collection of individuals and entities in the waste and resource recovery sector, including disposal facilities, waste transporters, exporters and resource recovery entities;
- d. developing future regulatory changes (supported by regulatory impact assessment) to better manage greenhouse gas emissions from landfills, once better data is available on greenhouse gas emissions from waste disposal, including:
 - i) requiring landfill gas capture at all municipal landfills that receive organic material by 31 December 2026, and
 - ii) investigating the requirement for:
 - a. landfill gas capture at a wider range of landfill sites that receive organic waste and/or
 - b. banning specified organic materials from disposal to land by 2030
- e. collaborative work by the Ministry for the Environment, the Ministry for Business, Innovation and Employment, and the Ministry for Primary Industries to identify and implement further cross-sector opportunities to reduce construction and demolition waste, including through the Building for Climate Change programme and work on the circular and bioeconomy strategy;
- f. developing future legislation and regulations (supported by regulatory impact assessment) to establish obligations for households, businesses, collectors, disposal facilities and others to separate out specified organic materials to increase beneficial re-use and reduce emissions associated with disposal, including:
 - i) food scraps and garden waste
 - ii) paper and cardboard
 - iii) construction and demolition waste including timber

6 **note** that current modelling shows that targets for reducing emissions from landfills will not be met without a future ban on disposal of certain organic materials to landfill, but that we lack sufficient data and alternative processing infrastructure to establish a ban at this time;

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7 **note** that the emissions reduction plan work programme for waste is subject to a Budget 2022 Climate Emergency Response Fund bid, requested to deliver on the first emissions budget for waste;

8 **agree** that the package of work in the inaugural emissions reduction plan to achieve reductions in emissions from F-gases in line with the Climate Change Commission's recommendations includes:

- a. developing regulatory proposals for prohibiting import of pre-charged equipment containing high global warming potential F-gases (if alternatives are available);
- b. collaborative work by the Ministry for the Environment and WorkSafe to implement appropriate training and accreditation to ensure the safety of workers servicing equipment that uses F-gases for heating and cooling (including low global warming potential equipment);
- c. developing future regulatory proposals (supported by regulatory impact assessment) to prohibit the sale and use of high global warming potential F-gases used for servicing, where alternatives are available and provisions for ensuring worker safety have been made;
- d. collaborative work by the Ministry for the Environment with relevant agencies on additional opportunities to reduce emissions through whole-of-life management and design options.

Authorised for lodgement Hon David

Parker

Minister for the Environment

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Appendices

Appendix 1: Table of Climate Change Commission Waste and F-gas recommendations and responses

Appendix 2: Interim Regulatory Impact Statement: National licencing system in waste and resource recovery

Appendix 3: Interim Regulatory Impact Statement: Options to manage imports of finished products containing HFC refrigerants

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Appendix 1: Table of Climate Change Commission Waste and F-gas recommendations and government responses

Climate Change Commission Recommendation	Sub recommendation	Final recommendation overview	Final recommendation	Government decision	Government response	Timeframe Indication of budget period in which response to this recommendation will be actioned
R23	R23.1a	We recommend that, in the first emissions reduction plan, the Government commits to: Revising the New Zealand Waste Strategy so that it will deliver emissions reductions, and implement measures to reduce HFC emissions. The revised New Zealand Waste Strategy should include:	Acting in partnership with Iwi/Māori, giving effect to the principles of Te Tiriti o Waitangi/ The Treaty of Waitangi, and aligning with He Ara Waiora framework.	Agree	Addressed through work to develop a new waste strategy, new legislation and new administrative processes.	Budget period 1 (2022-25) ongoing
R23	R23.1b		The revised New Zealand Waste Strategy should include: Acting in collaboration with local government, community groups and industry to leverage cross-sector action and finance.	Agree	Addressed through work to develop a new waste strategy, new legislation and new administrative processes.	Budget period 1 (2022-25)
R23	R23.1ci		The revised New Zealand Waste Strategy should include: Shaping plans in line with the 'waste hierarchy' to significantly decrease waste generation and increase resource recovery across waste streams.	Agree	The waste work programme, including the ERP initiatives to reduce emissions from waste is directed towards these goals, including the work on a new waste strategy to drive long-term coordinated change.	Budget period 1 (2022-25)
R23	R23.1cii		Shaping plans in line with the 'waste hierarchy' to reduce emissions via specific, time-bound goals.	Agree	Addressed through the ERP suite of proposals and the revised waste strategy, subject to funding, noting data limitations. An emissions reduction target for waste was	Budget period 1 (2022-25)

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					included in the consultation proposals for the revised waste strategy.	
R23	R23.1ciii		Shaping plans in line with the 'waste hierarchy' to identify and implement regulatory changes to assist people to take actions to reduce waste emissions.	Agree	Addressed through the ERP, revised waste strategy and proposals for improved powers in new waste legislation review, subject to funding, future regulatory impact assessments and consultation for specific policy proposals.	End of budget period 1 2024/25 and beyond
R23	R23.1di		Accelerating investment in research, development, and demonstration to reduce waste through more efficient processes.	Agree	Investment to support research and innovation was included as a priority in the consultation proposals for the new waste strategy and the emissions reduction plan, which will guide future investment and funding activity.	Budget period 1 (2022-25) and beyond
R23	R23.1dii		Accelerating investment in Infrastructure for waste collection, processing, and resource recovery.	Agree	Addressed through the ERP and improving household kerbside and commercial food waste recycling proposals subject to Budget 22 funding. As well as through a range of policy tools including, waste strategy, Infrastructure plan, waste minimisation fund, etc.	Budget period 1 (2022-25) and beyond
R23	R23.1diii		Accelerating investment in support for consumers to reduce waste emissions through switching to low-waste or low-emissions alternatives.	Agree	Addressed through the ERP consumer organic waste reduction programmes proposal and proposed circular and bioeconomy strategy (refer rec 14) subject to Budget 22 funding. As well as through the revised waste strategy	Budget period 1 (2022-25) and beyond
R23	R23.1div		Accelerating investment in improved data collection across the waste sector, including farm fills, non-municipal fills and wastewater treatment plants.	Agree	Addressed through the ERP national waste licensing proposal and national data collection and reporting programme on emissions reductions from waste, including landfill gas capture feasibility and research, subject to consultation and funding.	Budget period 1 (2022-25) and beyond

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					Proposals are in place to improve waste data collection for landfill disposal (to some facility types), however broader regulation is required to make provision for more comprehensive data enabling emission reduction planning. Further investigation is required for farm fills and wastewater treatment.	
R23	R23.1e		Setting a date by which high performance gas capture systems are mandated for all landfills that accept organic waste.	Agree in part	We agree in principle with the Commission's proposed timeline of 2026 for mandated landfill gas capture from Class 1 municipal landfills (noting that this could happen sooner), but not for <i>all</i> landfills. This recommendation requires further investigation to determine if gas capture should be mandated for non-municipal landfills. ERP proposals to improve and expand LFG capture systems require feasibility and future change to regulation and are subject to consultation and funding.	Budget period 1 (2022-25)
R23	R23.2a		Measures to reduce HFCs should include: Expanding import restrictions where feasible.	Agree in part	A proposal to create prohibitions on import/sale of pre-charged equipment is included in the ERP work programme. Further consultation on the specific design and implementation of regulations to this effect will be required once Cabinet approval has been received. Further proposals regarding expansion of import restrictions, including accelerating our Kigali Amendment phasedown timelines, have been removed following consultation	Budget period 1 (2022-2025)

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					feedback that these would be technically very difficult for industry to implement.	
R23	R23.2b		Measures to reduce HFCs should include: Improving industry practice to reduce leakage.	Agree	Addressed through investigating an appropriate legislative mechanism for introduction of leak testing. The ERP for improved training and an accreditation scheme aligns with existing MBIE proposals in this space and will include a focus on improving industry practice to reduce leakage as well as to address health and safety concerns raised through the consultation process regarding lower GWP F-gases.	Budget period 1 (2022-2025)
R23	R23.2c		Measures to reduce HFCs should include: Enabling businesses and consumers to switch to low climate impact alternatives.	Agree in principle	Specific measures targeted to industry/ consumer needs will be considered as part of further detailed consultation on F-gas policy	Budget period 1 (2022-2025)
R18	R18.3d	We recommend that, in the first emissions reduction plan, the Government commit to: Accelerating emissions reductions from the light vehicle fleet. This should include the Government:	Accelerating the uptake of electric vehicles (EVs) by introducing a range of measures, including: Encouraging battery refurbishment, repurposing, and recycling systems, working with the private sector to do so.	Agree	A Product Stewardship scheme for large batteries is currently being developed. A separate consultation was undertaken in late 2021 on proposed regulations for large batteries (includes EV battery refurbishment, repurposing, and recycling system)	Budget period 1 (2022-25)

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Appendix 2: Interim Regulatory Impact Statement: National licencing system in waste and resource recovery

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Appendix 3: Interim Regulatory Impact Statement: Options to manage imports of finished products containing HFC refrigerants

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