

Office of the Minister of Agriculture

Cabinet Economic Development Committee

Agriculture initiatives for inclusion in the final Emissions Reduction Plan

Proposal

- 1 This paper seeks agreement to an integrated package of agriculture initiatives for inclusion in the final Emissions Reduction Plan.

Relation to government priorities

- 2 Proposed initiatives directly relate to Government's priority of 'laying the foundations for the future', including addressing the key issue of climate change.

Executive Summary

- 3 This Government, through the *Fit for a Better World* vision and roadmap, has been working in partnership with the food and fibre sector to set and achieve ambitious targets for a more productive, sustainable, and inclusive primary economy. It continues to work through the *He Waka Eke Noa Primary Sector Climate Action Partnership* to develop an emissions pricing solution for agriculture.
- 4 The Emissions Reduction Plan (ERP) provides us with an opportunity to strengthen collective action of how government, industry and iwi/ Māori present a comprehensive package of initiatives in response to the Climate Change Commission's (the Commission) recommendations for agriculture. This will be critical for meeting legislated emissions reduction targets, with agriculture emissions accounting for 48 percent of New Zealand's gross emissions.
- 5 I propose a range of initiatives for the agriculture chapter of the ERP that span across four key action areas. These action areas are:
 - 5.1 price agricultural emissions;
 - 5.2 accelerate new emissions mitigations;
 - 5.3 support producers/farmers to make changes; and
 - 5.4 Transition to lower emissions systems.
- 6 Each of these action areas include specific initiatives to incorporate Māori-led solutions into the ERP for agriculture.

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- 7 To set the sector up to further reduce emissions across the emissions budgets I am considering the following new initiatives for inclusion in the agriculture chapter of the ERP:
 - 7.1 investigate an 'Early Adopter Fund' to incentivise the adoption of available mitigation technologies and practices;
 - 7.2 a step change in the level of investment in research and development (R&D), underpinned by an R&D plan for science and mātauranga to reduce biological emissions from agriculture;
 - 7.3 establish a new Agriculture Greenhouse Gas Centre of Excellence (the Centre) in partnership with the primary sector, Māori and science sector. The Centre will support the delivery of the higher level of R&D investment and include a new public-private joint venture focused on product development and commercialisation;
 - 7.4 expand climate-focussed extension and advisory services;
 - 7.5 new tikanga-based programmes to support change on farms;
 - 7.6 work with our largest farmer - State Owned Enterprise Landcorp Farming Limited (trading as Pāmu) - to explore options to accelerate on-farm emission reductions while supporting long-term profitability.
- 8 The new initiatives will be described in the agriculture chapter of the ERP at a high-level, signalling government intent while allowing further work by officials in partnership with the primary sector, Māori and key stakeholders.
- 9 I intend to report back to Cabinet seeking further policy decisions on initiatives outlined in this paper, including policy decisions regarding the establishment of a new Agriculture Greenhouse Gas Centre of Excellence.

Background

- 10 This paper is one of a set of papers containing proposals for inclusion in the Emissions Reduction Plan that the Government is required to publish under the Climate Change Response Act 2002 (CCRA), in conjunction with Budget 2022, and no later than 31 May 2022.

Collective action to reduce agriculture emissions

- 11 In 2021 the food and fibre sector accounted for ten percent of our gross domestic product, over 65 percent of our export revenue, and nearly 12 percent of our workforce. Agriculture accounts for nearly half of New Zealand's gross emissions. About three-quarters of these emissions are biogenic methane emitted from livestock, followed by nitrous oxide and carbon dioxide emissions.

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- 12 In 2019, the food and fibre sector represented by government, industry, and Māori stakeholders, released its vision and roadmap for the primary sector - *Fit for a Better World*. This roadmap set ambitious targets for a more productive, sustainable, and inclusive primary economy. It includes the target of reducing biogenic methane by less than ten percent below 2017 levels by 2030, and 24 to 47 percent below 2017 levels by 2050. The targets for biogenic methane are set out in the CCRA.
- 13 Agriculture is also a core part of New Zealand's economy and social fabric and achieving these targets will continue to require a coordinated effort by government, industry, iwi/Māori who have major investments in pastoral farming, and producers.
- 14 Global demand for low emission food is starting to grow and overseas retailers are placing increasing importance on the emission footprint of food products. This presents an opportunity for New Zealand producers with a competitive advantage in this area.
- 15 Our exporters have started to take steps to incentivise lower emission products from their producers. For example, we have seen Synlait build in requirements for producers participating in its 'Lead with Pride' certification programme to have an emissions management plan and provide evidence to show how measures are being implemented on farm.
- 16 This Government has been working in partnership with the sector and Māori through the He Waka Eke Noa Primary Sector Climate Action Partnership to develop alternative pricing approaches to the New Zealand Emissions Trading Scheme (NZ ETS) with the aim of developing a farm-level pricing mechanism. It will deliver its final advice to Ministers by 31 May 2022.
- 17 Alongside industry, government has also invested around \$200 million over the last ten years in R&D for biological emission mitigation technology and in capability development, including New Zealand's support for the Global Research Alliance on Agricultural Greenhouse Gases. This investment has supported:
 - 17.1 new tools for farmers to mitigate greenhouse gases including improved on-farm practices, a urease inhibitor, low emissions sheep, and low emissions feeds;
 - 17.2 identification of a promising range of mitigations domestically that are still under development including work towards methane inhibitors, nitrification inhibitors, and a methane vaccine;
 - 17.3 international networks that have accelerated ambition and progress in development of mitigations, such as through internationally collaborative projects;
 - 17.4 a global rumen census that showed that methane producing microbes are similar globally which has underpinned the development of methane mitigation tools, such as the inhibitor 3NOP; and
 - 17.5 capability and infrastructure to support mitigation technology development.

B U D G E T S E N S I T I V E

- 18 To position our agricultural sector to take advantage of the demand for low emission food and fibre, as well as meet emissions targets, further Government investment and direction, in partnership with industry, is needed.

Scale of the emissions reduction challenge

- 19 The Climate Change Commission (the Commission) delivered its final advice to Government in June 2021, including recommendations on setting emissions budgets out to 2035.
- 20 In March 2022, Cabinet agreed to sub-targets for monitoring progress against emissions budget one (EB1) for agriculture based on the Commission’s demonstration path. This is shown in the table below.

Table One: Agricultural emission sector sub-targets and shortfall

	EB1 2022-2025	EB2 2026-2030	EB3 2031-2035
Sub-target for agriculture (Mt CO ₂ -e)	159.4	191	183
Gap between baseline projections and sub-target (Mt CO ₂ -e)	3.7	8	11.8

- 21 It is important to note that the gap in EB1 largely exists due to updated agricultural baseline projections of emissions, which are higher than the baseline projections the Commission used when it provided its advice, and differences in emissions modelling between the Ministry of Primary Industries (MPI) and the Commission.
- 22 There is also a degree of uncertainty around the size of the gap between baseline emissions and the sector sub-targets due to inherent uncertainties in projecting agricultural emissions. For example, officials estimate that projected baseline emissions for EB1 could be 0.4Mt lower than the sector’s sub-target or up to 7.9Mt higher (with a central estimate of 3.7Mt higher).
- 23 Government’s fresh water and ETS reforms are expected to reduce agricultural emissions over the budget periods. Water reforms will encourage lower stocking rates in parts of the country and some land to be taken out of production and fenced off to protect waterways, while the rising price of carbon will result in some livestock farming land converting to forestry. These expectations are currently modelled in baseline emission projections.
- 24 It is clear, however, that to achieve our agricultural emissions targets, further steps are needed to meet emissions targets while also increasing the value of the primary sector.

The Climate Change Commission recommended a comprehensive approach to reduce emissions

- 25 The Commission noted that agriculture will be critical to achieving legislated targets. It is of the view that even without new technologies, we can reduce agriculture emissions through efficiencies on farms, and by switching some pastoral land to forestry and horticulture. The Commission is also of the view that investment in R&D has the potential to meet the more ambitious end of the 2050 biogenic methane target.
- 26 The Commission's key recommendations for government were to:
 - 26.1 follow through on the commitment to implement a pricing mechanism to incentivise on-farm reductions;
 - 26.2 work with industry to develop advisory services;
 - 26.3 improve rural digital connectivity;
 - 26.4 remove barriers to deploying emerging technologies – such as streamlining food safety legislation;
 - 26.5 support systems and infrastructure for alternative, lower emission land uses; and
 - 26.6 invest in research and development.
- 27 This paper outlines how government can address the Commission's recommendations in the ERP. Appendix One outlines each of the Commission's recommendations in greater detail and government response.

The proposed agriculture initiatives for the ERP

- 28 I propose that the ERP outline an integrated set of initiatives, framed within four action areas, to address the recommendations of the Commission. Some of the initiatives outlined below are already operational, some will require investment in Budget 2022 and future budgets, and several are new initiatives that I propose Cabinet note we are progressing.
- 29 Proposed initiatives for the agriculture chapter of the ERP are framed around four action areas:
 - 29.1 price agricultural emissions by 2025;
 - 29.2 accelerate new emissions mitigations;
 - 29.3 support producers / farmers to make changes; and
 - 29.4 transition to lower emissions systems.
- 30 My priority to enable Māori-led solutions is cross-cutting and integral to all action areas. Each of these action areas includes specific actions to incorporate Māori-led solutions into the ERP for agriculture.

Action area One: Price agricultural emissions by 2025

He Waka Eke Noa Primary Sector Climate Action Partnership (existing initiative)

- 31 In line with the Commission's recommendation, government is following through on the commitment to implement a pricing mechanism to incentivise on-farm reductions.
- 32 By 31 May 2022, the He Waka Eke Noa Primary Sector Climate Action Partnership (He Waka Eke Noa) will make recommendations to Ministers on how to price agriculture emissions. He Waka Eke Noa has looked at alternative pricing approaches to the NZ ETS with the aim of developing a mechanism that is more effective in driving emissions reductions at the farm-level. They are currently consulting with the sector on two pricing options: a farm-level levy and processor-level hybrid levy.
- 33 Once advice is presented to Ministers, the Commission will assess He Waka Eke Noa's progress and report back to Ministers by 30 June 2022. Ministers will take decisions to Cabinet on pricing agricultural emissions by the end of 2022 to enable implementation by 2025. Once Cabinet has decided on a preferred pricing option, officials will develop the systems and infrastructure to implement a pricing mechanism.
- 34 The Climate Change Response Act 2002 has several upcoming and additional legislated milestones for He Waka Eke Noa. Milestones include 100 percent of farms reporting their emissions by 31 December 2022 and 100 percent of farms having a written farm plan to measure and manage emissions by 1 January 2025.¹

Te Aukaha - enabling Māori-led solutions (existing initiative)

- 35 Within He Waka Eke Noa, the Federation of Māori Authorities is leading Te Aukaha, a cross-connecting workstream that integrates Māori perspectives and ensures the pricing mechanism will support the land development aspirations of Māori farmers while not exacerbating existing inequities.

An Early Adopter Fund (new initiative)

- 36 I propose to explore an 'Early Adopter Fund' (the Fund) to incentivise on-farm changes. Prior to the introduction of any agricultural emission pricing and revenue recycling system from 2025 there is currently little incentive for producers to take mitigation actions.

¹ As of 1 January 2021, 61% of farms know their annual total of on-farm greenhouse gas emissions and 21% of farms have a written plan to measure and manage their greenhouse gas emissions.

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- 37 I envisage two ways in which this fund could be used:
- 37.1 providing a contribution towards the cost of adopting biological emission mitigation technologies. Note there are currently two technologies that could be ready-to-adopt and considered for funding within EB1. s 9(2)(f)(iv)
[Redacted]
[Redacted] Officials would undertake further investigation to assess additional mitigation technologies and practices that could be eligible for funding; and
 - 37.2 to accelerate on-farm trials of overseas technologies to adapt them for the New Zealand pastoral farming context.
- 38 Further work is needed to design the Fund. This will ensure that any funding results in emission reductions beyond actions that farmers are already commercially incentivised to take. He Waka Eke Noa has begun designing a similar system for recycling revenue from agricultural emissions pricing and this work could be leveraged to design the Fund.
- 39 Design work will inform the scale of funding needed for the Fund. I expect the Fund's size would not exceed the quantum of revenue raised by the preferred emissions pricing system and align with the level of subsidisation that system is likely to deliver. s 9(2)(b)(ii)
[Redacted]
[Redacted]
- 40 s 9(2)(f)(iv)
[Redacted]
[Redacted]

Action area Two: Accelerate development of new mitigations

Step change in investment in research and development (R&D) (new initiative)

- 41 The Commission recommended investing in R&D to support more ambitious reductions in agricultural emissions in future budgets.
- 42 Government and industry have invested around \$200 million over the last ten years in R&D and international partnerships to reduce agricultural emissions. Domestic research has been supported through the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC), and programmes such as the Global Research Alliance on Agricultural Greenhouse Gases, Sustainable Land Management and Climate Change research programme, the Greenhouse Gas Inventory Research Fund, the Pastoral Greenhouse Gas Research Consortium, and the Sustainable Food and Fibre Futures fund.

[Redacted]
s 9(2)(f)(iv)
[Redacted]
[Redacted]
[Redacted]
s 9(2)(b)(ii)
[Redacted]

- 43 Our investment to date in R&D has, in part, contributed to the 30 percent reduction in the emissions intensity in our meat and dairy products over the past 30 years. Government funded R&D contributed to the development of technologies like urease inhibitors for use in New Zealand. Since their commercialisation in 2001 urease inhibitors have mitigated 0.17Mt CO₂-e of nitrous oxide.
- 44 Several promising mitigations for pastoral farming systems have also been progressed because of government funded R&D. This includes low methane emitting sheep, methane and nitrous oxide inhibitors and a methane vaccine. Globally, there are more than 50 different mitigations or research areas being investigated to reduce agricultural emissions.⁴
- 45 While we are making progress, there is broad consensus across industry, government, and the research community that we need a step change in investment and activity to support reductions in biological emissions in line with our targets.
- 46 I propose that, as part of the ERP, Government expand the range of activities and investment in agricultural greenhouse gas mitigation R&D. This would include:
- 46.1 streamlining the path to market of new innovations to accelerate deployment and uptake;
 - 46.2 expanding greenhouse gas methane measurement capacity to ensure producers can be rewarded for adopting new technologies;
 - 46.3 delivering technology and practice demonstration programs to ensure mitigation options are visible to farmers;
 - 46.4 expanding international collaborations to leverage overseas expertise and technology developments;
 - 46.5 supporting innovation prizes to encourage technological break throughs and demonstrate our international contribution to reducing global agricultural emissions; and
 - 46.6 supporting mātauranga-based approaches to ensure mitigation solutions work for Māori/iwi producers.
- 47 This work would be underpinned by a R&D plan for science and mātauranga to reduce biological emissions from agriculture (the R&D plan). The R&D plan is already being developed in partnership with industry, Māori and the science sector, and with the Ministry of Business, Innovation and Employment (MBIE). It is one of eight priority areas for science and mātauranga accelerator plans under the *Fit for a Better World* roadmap.
- 48 To achieve the step change in R&D activity, officials are of the view that sustained investment is needed from both government and industry will be required.

⁴ These mitigations include feeds and feed additives, inhibitors, methane capture in waste management, wearable devices, breeding, and vaccines.

Establishment of an Agriculture Greenhouse Gas Centre of Excellence (new initiative)

- 49 R&D is currently delivered through a range of structures and programmes that have evolved over the last 15 years. This has led to some fragmentation of leadership and effort. It has limited the ability to attract and develop the right capability, expertise and infrastructure, and the sector has lacked a strong commercial focus on establishing pathways to market.
- 50 Officials have engaged with representatives of industry and government to identify the key changes required to the current system. These include the need for: a stronger commercial focus and acumen, shared strategic direction, longer term investment and an uplift in capability and capacity.
- 51 To support the proposed step change in agriculture emissions R&D I propose to establish a new Agriculture Greenhouse Gas Centre of Excellence (the Centre) to drive our R&D activity and deliver on three key outcomes:
- 51.1 driving faster development, commercialisation and uptake of emissions mitigation technologies;
 - 51.2 creating a strong system to support delivery of mitigations over the long term; and
 - 51.3 strengthening leadership in and alignment of biological emissions efforts.
- 52 Officials have engaged with representatives of industry and government to further develop the detail of the Centre, which is proposed to consist of:
- 52.1 a new public-private joint venture focused on product development and commercialisation of a portfolio of mitigations, which would be the principal vehicle for private sector investment;
 - 52.2 strong leadership, partnership and share strategic direction; and
 - 52.3 ensuring we have the right support system for the joint venture and wider biological emission reduction efforts (including underpinning research and development, capability and infrastructure, and trusted information) through an enhanced New Zealand Agriculture Greenhouse Gas Research Centre (NZAGRC).
- 53 s 9(2)(f)(iv) [Redacted]
[Redacted]
[Redacted] s 9(2)(j)
[Redacted]
[Redacted]
[Redacted]
- 54 Implementing this proposal will require investment in Budget 2022 or future budgets.
- 55 I propose the Minister of Agriculture, Minister of Research, Science and Innovation, and Prime Minister be given authority to negotiate and enter into an agreement with industry on the scope, form and establishment of a joint venture as part of the Centre.

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Streamlining regulatory pathways for new technologies (existing initiative)

- 56 The Commission recommended streamlining regulations that govern the food safety system to avoid hindering the roll out of new, safe and effective emission reducing technologies and practices.
- 57 Officials are working on both a short-term and a medium-term solution to support safe and effective mitigation technologies through our food safety system, including methane inhibitors.
- 58 The European Union has already approved the first methane inhibitor for use in animal feed. New Zealand's regulatory system, however, is not set up to provide regulatory oversight of such technology.
- 59 To address this in the short-term, officials plan to progress an Order in Council to declare particular substances used in inhibitors as 'agricultural compounds' under the Agricultural Compounds and Veterinary Medicines Act 1997 (ACVM). This will allow officials to strengthen oversight of their use and ensure products are appropriately tested and formulated, and potential risks to trade, food safety, animal and plant health are appropriately managed.
- 60 In the medium-term officials will progress legislative changes to the ACVM. These changes are expected to progress to Cabinet within the next two months.
- 61 As identified in the R&D plan, there is a need to streamline the regulatory and inventory system relevant to new mitigation technologies. Actions will be taken to increase regulatory capacity, work with partners to establish international standards for maximum residue levels in food products, and to incorporate new mitigations in the National Greenhouse Gas Inventory.

Action area Three: Support producers to make changes.

Climate-focussed extension and advisory services (new initiative)

- 62 The Commission advises that effective advisory services are needed to support farmers to develop new skills, learn about, and adopt practices and technologies that reduce emissions. Existing education, training and advisory programmes will need to be scaled up to meet the growing demand for these services.
- 63 I propose that Government commit in the ERP to improving the level of support for producers to reduce emissions on-farm.

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- 64 Increasing the level of support for producers would encompass:
- 64.1 development and delivery of on-farm extension services, regional workshops, fielddays (for example showcasing technologies through facilitated day programmes at a top performer's farm);
 - 64.2 facilitated, small scale produce group meetings to share knowledge and tap into specialist advice;
 - 64.3 upskilling existing farm system advisors on mitigation technologies and farm practices and how to implement them;
 - 64.4 workshops on climate change to upskill the broader agribusiness workforce (for example, agronomists, bankers); and tikanga-based programmes (discussed below).
- 65 These specialised climate-focused services would complement wider efforts by this Government to grow farm advisory services and implement integrated farm planning. Broader services are intended to deliver direct farmer support for whole-of-system farming change, helping producers to navigate an increasingly dynamic economic, regulatory and environmental ecosystem.
- 66 The services will also be instrumental in supporting technology adoption on-farm. As part of its 'path to impact' for mitigations, the R&D plan is focused on progressing mitigations to a stage where they are adoptable, with extension and advisory services instrumental in helping to showcase technologies and support uptake.
- 67 Implementing this proposal will require investment in Budget 2022 and s 9(2)(f)(iv).

Tikanga-based programmes to support change on farms (new initiative)

- 68 Feedback on the Commission's draft advice indicated that models of agricultural education, training and advisory services are not fit for purpose for Iwi/Māori needs.
- 69 As part of the extension and advisory initiative discussed above, I propose government support a Māori-led design process to develop tikanga-based programmes to support on-farm change. This initiative would complement the Māori Agribusiness Extension programme (MABx) which aims to build networks and knowledge of Māori agribusinesses, trustees, and landowners to undertake change and achieve more from their whenua.
- 70 Tikanga-based programmes are needed to support whenua Māori entities and ensure the intergenerational wellbeing of Māori as they transition to a low emissions future. Without a Te Ao Māori approach, climate change will compound the long-standing barriers to improved utilisation of whenua Māori entities (for example, access to capital, historical separation from land, lack of access to traditional agricultural extension services).
- 71 Implementing this proposal will require investment in Budget 2022 and s 9(2)(f)(iv).

Improving rural digital connectivity to improve access to information and online tools (existing initiative)

- 72 The Commission recommended that farmers and growers be supported to identify and implement changes on farm to reduce emissions by resourcing and prioritising rural digital connectivity.
- 73 The Minister for the Digital Economy and Communications and his officials have work underway to improve rural digital connectivity through the Future of Connectivity Programme. This includes completing the Rural Broadband Initiative Phase 2 (RBI2) and the Mobile Blackspot Initiative by the end of 2023 and progressing rural tower and capacity upgrades. A Rural Capacity Upgrade programme is commencing in early 2022 that aims to reduce congestion and per network performance for around 55,000 rural users.
- 74 MBIE is also advancing work on further investment to address rural capacity issues, making more radio spectrum available for additional 5G mobile coverage, and exploring ways in which people living in rural and remote areas can get internet access where fibre or mobile infrastructure may not be viable. In addition, [MBIE is developing] a more strategic, integrated and long-term approach is being developed to guide government's investment in telecommunications infrastructure, including meeting the needs of rural and remote communities.

Action area Four: Transition to lower emissions systems

- 75 The Commission recommended supporting the deployment of the systems and infrastructure needed for alternative lower emissions farming systems and products, including enabling Māori collectives to participate in these new opportunities.
- 76 Diversifying land uses, including switching some land currently in livestock agriculture to horticulture or arable cropping, could reduce emissions and generate economic benefits. The opportunities, risks and implications of doing so need to be fully explored and understood in the context of the low-emissions transition.

Food and fibre science and mātauranga accelerators (existing initiative)

- 77 Through the *Fit for a Better World* roadmap there are several science and mātauranga R&D plans being developed. These are targeted at accelerating areas of R&D that are critical to deliver the outcomes of *Fit for a Better World*. One of these is the biological emissions plan mentioned above. Other areas include diversifying the horticulture sector, building the alternative protein sector, integrating dairy and beef sectors, and supporting land-use decision making. Each of these areas will also support lower-emissions land use and food production.

- 78 Work is also underway across the accelerator areas to ensure the different needs and aspirations of whenua Māori entities are taken into account. This work is Māori-led and is intended to ensure the R&D areas and related key innovation initiatives under *Fit for a Better World* make up a connected whole from a Te Ao Māori perspective and collectively deliver for Māori.

Building the evidence base for regenerative agriculture (existing initiative)

- 79 Regenerative agriculture practices seek to increase soil carbon, improve soil health and freshwater quality, reduce the climate footprint of food systems, and enhance biodiversity. More research is needed to understand and measure the potential benefits of regenerative agriculture and its potential contribution to emissions reduction.
- 80 MPI established a Technical Advisory Group for regenerative agriculture in September 2020 to help establish an evidence base for regenerative farming and horticultural practices. MPI is also supporting projects that will research regenerative farming practices through the Sustainable Food and Fibre Futures co-investment fund, and investing in Quorum Sense, a national project supporting farmers to share knowledge about developing and implementing regenerative agriculture practices and systems.

Low emission Pāmu (new initiative)

- 81 I have considered whether New Zealand's largest farmer, the State-owned enterprise (SOE) Landcorp Farming Limited (trading as Pāmu), could play a greater role in reducing emissions and demonstrating leadership in this area. Pāmu accounts for 0.73Mt annually, which equates to approximately 2.9Mt of CO₂-e over EB1.
- 82 Pāmu currently plans to establish a science-based emission reduction target aligned with the 1.5°C goal. In the short term, it has committed to reduce its emission by at least four percent annually out to 2024.⁵ This level of emission reduction is greater than the CCRA target for biogenic methane - a ten percent reduction compared to 2017 levels by 2030.
- 83 Pāmu is developing a plan to achieve this four percent annual reduction with the support of Toitū Envirocare. Pāmu currently has an 'indicative emission reduction plan' aligned with a separate target of reducing *net* emissions by ten percent by 2030. [s 9\(2\)\(b\)\(ii\)](#)
- 84 Pāmu expects that industry efforts to reduce emissions will be promoted by the new Taskforce for Climate Related Financial Disclosures standards, which it is complying with, and aims to have all its farms 'CarbonReduce' certified by Toitū Envirocare by 2024.

⁵ These targets are tied to a \$85 million sustainability-linked loan Pāmu has with Westpac NZ. Pāmu will receive pricing discounts if it achieves emission reductions in line with these targets and pay higher costs if it does not.

- 85 Pāmu has indicated it could potentially deliver further emission reductions by accelerating land use change to horticulture, speeding up the genetic gain of low methane sires and expanding its dairy beef programme. s 9(2)(g)(i), s 9(2)(j)
- 86 Officials have not yet been able to assess the cost or benefits of further reducing Pāmu’s emissions. They anticipate that there may be a spectrum of costs for Pāmu, ranging from technical advice and assessment of changes, to the significant cost involved in land use conversions.
- 87 Under the State-Owned Enterprises Act 1986 (the Act) Part 1, Principles of the Act, Pāmu’s principal objective is to operate as a successful business. Section 7 of the Act (Non-commercial activities) provides that “Where the Crown wishes a State enterprise to provide goods or services to any persons, the Crown and the State enterprise shall enter into an agreement under which the State enterprise will provide the goods or services in return for the payment by the Crown of the whole or part of the price thereof.”
- 88 I propose that, through Shareholding Ministers, the government work with Pāmu to investigate options to further reduce their gross emission beyond those currently planned.
- 89 While undertaking this investigation, I expect officials to take account of the expectations communicated to Pāmu by Shareholding Ministers. Relevant expectations are that Pāmu should continue working to reduce its environmental impact, including its emissions, and to prioritise the profitability of its farming operations, including through effective capital allocation.
- 90 I also expect officials to consider Pāmu’s industry leadership position and whether this position could influence wider industry adoption of emission reduction initiatives. Pāmu’s leadership is likely to be most effective if it can clearly demonstrate the financial viability of initiatives alongside improved environmental impacts.
- 91 Officials will also need to consider whether the possibility of Crown financial support for Pāmu’s emission reduction initiatives could create an unintended expectation that other farmers should be given financial assistance to change land use or reduce emissions.

s 9(2)(g)(i), s 9(2)(b)(ii)

Implementation

- 92 Implementation planning to take forward the ERP is underway but yet to be completed.
- 93 Primary producers, the private sector, researchers, whenua Māori entities, and rural communities will all have a significant role to play alongside central government in implementing the agriculture policies. Throughout the implementation of the ERP, I expect officials to work with iwi and Māori to enable Māori-led solutions. This is intended to ensure actions have been informed by a Te Ao Māori view and provide for tikanga and mātauranga Māori.

Financial Implications

- 94 Including the proposed initiatives in this paper in the ERP will likely create a public expectation that funding will be made available to implement them. Implementing these initiatives will require investment in Budget 2022, and subsequent Budgets.
- 95 To achieve the necessary step change in R&D activity, officials are of the view that sustained investment from both government and industry will be required.
- 96 Three Agriculture Emissions Reduction initiatives were submitted to Treasury and the Minister of Finance for consideration for CERF in Budget 2022. This funding totals s 9(2)(f)(iv) over four years. The bids are:
 - 96.1 \$6.3 million over one year to fund essential development work for an agricultural emission pricing system, enabling decisions to be taken in 2022/23 [refer to Action Area one];
 - 96.2 \$338.8 million over four years to deliver on the step change in the level of investment in agricultural greenhouse gas research and development [refer to Action Area two]; and
 - 96.3 s 9(2)(f)(iv) over four years for extension and farm advisory services to support producers and Māori entities [refer to Action Area three].
- 97 I have assumed that, if agreed to, the Centre of Excellence would be funded from the bid for investment in research and development.

98 s 9(2)(f)(iv) [Redacted]

Legislative Implications

- 99 There are no legislative implications arising directly from this paper.

Impact Analysis

Regulatory Impact Statement

- 100 An overarching Regulatory Impact Statement has been produced by the Ministry for the Environment (with input from other agencies) to support the overall ERP.
- 101 There are no regulatory proposals in this paper, and therefore Cabinet's impact analysis requirements do not apply.

Climate Implications of Policy Assessment

- 102 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 the outcome of Budget decisions.
- 103 For agricultural emissions to be below the Commission's demonstration pathway and achieve recommended emissions budgets, a high level of emissions reductions will be required; 3.7, 8, and 11.8Mt of CO₂-e respectively across the first three emissions budgets.
- 104 If agriculture's Budget 2022 initiatives are progressed, emissions impact modelling indicates that agriculture could achieve emissions reductions of between 0.0 to 2.5, 4.2 to 54.6, and 19.9 to 65.2Mt CO₂-e respectively across the first three emissions budgets. This impact is largely due to the expected reduction in emissions from accelerating development and uptake of on-farm emissions reduction technologies.
- 105 The new initiatives proposed may further reduce emissions across the three budget periods. More detailed modelling will be developed as individual measures are progressed, and full CIPA disclosures will be provided to Cabinet as appropriate.

Population Implications

- 106 This paper seeks to support an equitable transition for the agriculture sector. Reductions in agriculture emissions will only happen if there is a strong focus on supporting the behavioural change of our producers, rural communities, companies and whenua Māori entities.
- 107 The ERP includes further information on the distributional impacts of policies and measures within the scope of the plan and will include a response to the Commission's recommendation to develop a comprehensive Equitable Transitions Strategy.

Human Rights

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

Te Tiriti o Waitangi Implications

- 109 Te Tiriti o Waitangi obliges the Crown to 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].
- 110 Māori are likely to be disproportionately affected by emissions penalties due to the nature of their land assets. Agriculture emissions make up a large proportion of the overall Māori emissions profile (72 percent of gross emissions in the Māori economy compared to 53.4 percent of the total economy). Iwi and Māori have significant investments in agriculture, with assets of \$8.6 billion in sheep and beef farming and \$4.9 billion in dairy farming. Iwi and whenua Māori entities are estimated to own 30 per cent of sheep and beef production and 10 per cent of dairy production. Iwi and whenua Māori entities are estimated to own 30 percent of sheep and beef production and ten percent of dairy production.
- 111 Proposed initiatives will support a broader focus in the ERP on enabling a Māori-led transition, including mātauranga-based approaches. Māori face a unique set of challenges transitioning to lower emissions agriculture. A significant proportion of whenua Māori is underutilised and may be too steep, eroded or remote for productive use. Capital constraints, land tenure systems, and ownership structures can create additional barriers for whenua Māori use aspirations.

Consultation

Public consultation

- 112 Public consultation on the ERP discussion document 'Te hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future' concluded on 24 November 2021.

Iwi and Māori engagement

113 The Crown has commitments to partner with iwi and Māori and support Māori-led solutions. Māori, through the ERP public consultation process, identified their position to partner with the Crown and jointly-lead delivery of agriculture climate change goals. Officials also engaged whenua Māori entities and interested Māori in conjunction with engagement on He Waka Eke Noa. These discussions found:

- 113.1 Māori want to maintain and enhance options for their land and expressed a willingness to adopt new technologies and low-emissions practices; and
- 113.2 some participants emphasised that farming practices, including traditional Māori practices, that reduce emissions should be rewarded.

Consultation on this paper

114 The following government departments and agencies have been consulted on this Cabinet paper: Ministry for the Environment; the Treasury; Ministry of Foreign Affairs and Trade; Ministry of Business, Innovation & Employment; Energy, Efficiency and Conservation Authority; Ministry of Transport; Waka Kotahi – New Zealand Transport Agency; Te Arawhiti - the Office for Māori Crown Relations; Te Tūāpapa Kura Kāinga – Ministry of Housing and Urban Development; Te Puni Kōkiri, the Ministry of Māori Development; Department of Conservation; Department of Internal Affairs; Department of the Prime Minister and Cabinet; Inland Revenue - Te Tari Taake; Te Waihanga; Ministry of Social Development. Treasury officials were engaged on development of the proposed low-emission Pāmu initiative.

Communications

115 The Ministry for the Environment is working to develop a communications plan for announcements relating to the ERP in early 2022, dependent on Cabinet decisions and aligning with announcements on Budget 2022.

Proactive Release

116 I propose that this paper is proactively released on the Ministry for the Environment's website after the ERP and emissions budgets have been agreed and published in 2022, subject to redactions in keeping with the principles of the Official Information Act 1982.

Recommendations

I recommend that the Committee:

Emissions reduction challenge for agriculture

- 1 **Note** that Cabinet has agreed the following sub targets for the agriculture sector: 159.4Mt of CO₂-e in emissions budget one (2022-2025), 191Mt in emissions budget two (2026-2030) and 183Mt in emission budget three (2031-2035) [CAB-21-MIN-0320.01 refers].
- 2 **Note** that sub targets for agriculture require this Government to set out a comprehensive package of initiatives to reduce agriculture emissions across all three emissions budgets through to 2035 in its Emissions Reduction Plan.
- 3 **Note** to set the sector up to further narrow the gap in emissions budget one and emissions budget two, Cabinet agreement is sought to include additional proposals in the Emissions Reduction Plan.

Proposed agriculture content for the Emissions Reduction Plan

- 4 **Agree** to the Climate Change Commission's key recommendations for the Government for agriculture to:
 - 4.1 follow through on commitment to implement a pricing mechanism to incentivise on-farm reductions;
 - 4.2 work with industry to develop advisory services;
 - 4.3 improve rural digital connectivity;
 - 4.4 remove barriers to deploying emerging technologies – such as streamlining food safety legislation;
 - 4.5 support systems and infrastructure for alternative, lower emission land uses; and
 - 4.6 invest in research and development.
- 5 **Note** that initiatives for inclusion in the agriculture chapter of the Emissions Reduction Plan respond to the Climate Change Commission's key recommendations and fall under the following four action areas:
 - 5.1 **Action area One:** Price agricultural emissions by 2025;
 - 5.2 **Action area Two:** Accelerate development of new mitigations;
 - 5.3 **Action area Three:** Support farmers to make changes; and
 - 5.4 **Action area Four:** Transition to lower-emission farming systems.
- 6 **Note** that the priority to enable Māori-led solutions is cross-cutting and integral to all four action areas.

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Action Area one: Price agricultural emission

- 7 **Note** that the He Waka Eke Noa Partnership is currently consulting on two farm-level emission pricing options that could be introduced by 2025, a farm-level levy and processor-level hybrid levy. The partnership will deliver its advice on emissions pricing to Government in May 2022.
- 8 **Note** I plan to include the following initiatives in the agriculture chapter of the Emissions Reduction Plan:
 - 8.1 He Waka Eke Noa Primary Sector Climate Action Partnership (*existing initiative*);
 - 8.2 Te Aukaha, a cross-connecting workstream that integrates Māori perspectives (*existing initiative*); and
 - 8.3 proposal to investigate an Early Adopters Fund to incentivise adoption of available mitigation technologies (*new initiative*).
- 9 **Invite** the Minister of Agriculture to report back to Cabinet by September 2022 on the scope, budget and preferred funding mechanism of an Early Adopters Fund to support the adoption of mitigation technologies, practices.

Action Area Two: Accelerate development of new mitigations

- 10 **Note** I plan to include the following initiatives in the agriculture chapter of the Emissions Reduction Plan:
 - 10.1 step change in investment in research and development, underpinned by a research and development plan for science and mātauranga to reduce biological emissions from agriculture (*new initiative*);
 - 10.2 streamlining regulatory pathways for new technologies (*existing initiative*);
and
 - 10.3 Government to work in partnership with primary sector representatives to establish a new Agriculture Greenhouse Gas Centre of Excellence (*new initiative*).
- 11 **Authorise** the Minister of Agriculture, Minister of Research, Science and Innovation, and Prime Minister to negotiate and enter into an agreement with industry on the scope, form, and establishment of a joint venture as part of a new Agriculture Greenhouse Gas Centre of Excellence.
- 12 **Invite** the Minister of Agriculture to report back to Cabinet regarding the establishment of the Centre of Excellence in June 2022.

Action Area Three: Support producers to make changes

- 13 **Note** I plan to include the following initiatives in the agriculture chapter of the Emissions Reduction Plan, dependent on final Budget 2022 or future budget decisions where applicable:
- 13.1 an expanded climate-focussed extension and advisory service (*new initiative*);
 - 13.2 new Tikanga-based programmes to support change on farms (*new initiative*); and
 - 13.3 improving rural digital connectivity to improve access to information and online tools (*existing initiative*).

Action Area Four: Transition to lower emissions systems

- 14 **Note** diversifying land uses, including switching some land currently in livestock agriculture to horticulture or arable cropping, could reduce emissions and generate economic benefits.
- 15 **Note** I plan to include the following initiatives in the agriculture chapter of the Emissions Reduction Plan:
- 15.1 building the evidence base for regenerative agriculture (*existing initiative*);
 - 15.2 food and fibre science and mātauranga accelerators (*existing initiative*); and
 - 15.3 proposal to investigate the feasibility and how the Government could support Pāmu to reduce gross emissions further (*new initiative*).
- 16 **Agree** that Shareholding Ministers will ask the Pāmu Board to work with officials from Treasury and the Ministry for Primary Industries to investigate how the Government could support Pāmu to further reduce its gross emissions and understand the likely costs and benefits.
- 17 **Note** that the feasibility of further emission reductions have not been assessed by officials. s 9(2)(g)(i), s 9(2)(j)
- 18 **Invite** Shareholding Ministers and me to report back to Cabinet by September 2022 on the outcome of the investigation.

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Progressing agriculture content of the Emissions Reduction Plan

- 19 **Note** the proposed agriculture content for the final Emissions Reduction Plan may be subject to editorial changes and content updates by the Ministry of Primary Industries and Ministry for the Environment, which will be agreed with me where necessary.

Authorised for lodgement

Hon Damien O'Connor
Minister of Agriculture

Proactively Released