



# Te tātai utu o ngā tukunga ahuwhenua

## Pricing agricultural emissions

Consultation document



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

Ministry for Primary Industries  
Manatū Ahu Matua



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

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# Introduction

Climate change will increase the severity and frequency of hazards like flooding, heatwaves, drought and wildfire. New Zealand will also face new risks as a result of slow-onset, gradual changes, such as sea-level rise, ocean warming, more hot days, and more rainfall in some parts of the country and less in others.

These changes will affect New Zealanders in different ways, and the risk is that some groups, such as farmers, growers and rural communities may be disproportionately affected.

Enabling a just transition to a low-emissions, climate-resilient future is a priority for the Government. The agriculture sector, which makes up nearly half of Aotearoa New Zealand's greenhouse gas emissions,<sup>1</sup> is a crucial part of this transition.

Reductions in agricultural emissions are required to meet Aotearoa New Zealand's domestic and international emissions reductions targets. Currently, no major incentive exists for agricultural producers to reduce their emissions. Pricing agricultural emissions will address this and align with the approach taken in other sectors of Aotearoa New Zealand's economy.

Government partnered with the agriculture sector, iwi and Māori via the He Waka Eke Noa – Primary Sector Climate Action Partnership (the Partnership) to take action to reduce agricultural emissions. The Partnership was tasked with designing a farm-level pricing option as an alternative to the New Zealand Emissions Trading Scheme (NZ ETS).

The Partnership delivered its recommended option to the Government in May 2022, proposing a farm-level, split-gas levy to be implemented in 2025.

The Government evaluated the Partnership's proposal and sought advice from the Climate Change Commission (the Commission). The Government broadly supports the Partnership's recommended pricing framework but is proposing changes, to simplify the design and improve its effectiveness.

The Government is seeking your feedback on its modified version of the Partnership's farm-level, split-gas levy, including:

- the details of how it will work in practice
- the effect it will have on reducing emissions
- the impacts on participants and the wider economy.

Based on the Ministries' modelling, the Government expects this modified split-gas, farm-level levy could achieve sufficient emissions reductions to meet or exceed Aotearoa New Zealand's target to reduce biogenic methane emissions to 10 per cent below their 2017 levels by 2030.

The levy is expected to raise significant revenue at the prices and levels of uptake that have been modelled, sufficient to cover incentives for mitigation technologies and practices, with a surplus of \$100 million to \$140 million remaining. It will also cover the establishment costs of the system, estimated at \$87 million, and ongoing operating costs, estimated at \$32 million per year.

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<sup>1</sup> When using the carbon dioxide equivalent metric.

The Government also considered an alternative pricing option: pricing biogenic methane emissions via a separate market-based, tradeable quota system and pricing long-lived gases in parallel via the NZ ETS. The Government is not progressing tradeable methane quota at this stage.

While the Government is aiming to introduce a modified version of the Partnership's split-gas, farm-level levy in 2025, this is likely to be challenging to achieve. As a contingency, an interim processor-level levy is proposed, which could be turned on if it is not feasible to make the farm-level levy operational by 2025. The Government is seeking your feedback on this.

# Section 1: How to have your say

The Government welcomes your feedback on this consultation document. The questions posed throughout the text are summarised in the [list of consultation questions](#). They are a guide only and all comments are welcome. You do not have to answer all the questions.

To ensure your point of view is clearly understood, you should explain your rationale and provide supporting evidence where appropriate.

This consultation process seeks your feedback on:

- a farm-level, split-gas levy for pricing agricultural emissions
- two options for pricing synthetic nitrogen fertiliser emissions
- an interim processor-level levy, as a transitional step if the farm-level levy cannot be implemented in time
- recognition for some categories of sequestration in an adjacent contractual system from 2025, with the long-term goal of integration of new vegetation categories into the NZ ETS.

No feedback is sought on any other matters already set out in the Climate Change Response Act 2002 (CCRA).

## 1.1 Timeframes

This consultation starts on 11 October and ends on 18 November 2022. Once submissions have been considered, final proposals will go to ministers for approval in early 2023.

## 1.2 How to provide feedback

You can make a submission in two ways:

- via Citizen Space, our consultation hub, available at <https://consult.environment.govt.nz/>
- write your own submission.

If you want to provide your own written submission, you can do this as an uploaded file in Citizen Space.

We request that you don't email or post submissions because this makes analysis more difficult. However, if you need to, please send written submissions to Agricultural emissions pricing consultation, Ministry for the Environment, PO Box 10362, Wellington 6143 and include:

- your name or organisation
- your postal address
- your telephone number
- your email address.

If you are emailing your feedback, send it to [AgEmissionsPricing@mfe.govt.nz](mailto:AgEmissionsPricing@mfe.govt.nz) as a:

- PDF, or



- Microsoft Word document (2003 or later version).

**Submissions close at 11.59pm, 18 November 2022.**

For more information, contact [AgEmissionsPricing@mfe.govt.nz](mailto:AgEmissionsPricing@mfe.govt.nz).

A summary of submissions will be publicly available online after the consultation period and submissions analysis have been completed. The Government cannot reply to individual submitters.

## 1.3 Publishing and releasing submissions

All or part of any written comments (including names of submitters), may be published on the Ministry for the Environment's website, [environment.govt.nz](http://environment.govt.nz). Unless you clearly specify otherwise in your submission, the Ministry will consider that you have consented to website posting of both your submission and your name.

Contents of submissions may be released to the public under the Official Information Act 1982 following requests to the Ministry for the Environment (including via email). Please advise if you have any objection to the release of any information contained in a submission and, in particular, which part(s) you consider should be withheld, together with the reason(s) for withholding the information. We will take into account all such objections when responding to requests for copies of, and information on, submissions to this document under the Official Information Act.

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# Section 2: Background and context

## 2.1 Why is reducing agricultural emissions important?

Changes in climate – such as temperature and rainfall – are already happening in Aotearoa New Zealand. Everyone must adapt to the changing climate and contribute to international efforts to limit the global temperature increase by urgently reducing greenhouse gas emissions from all sources.

The stakes are high for Aotearoa New Zealand, where farmers and growers are both critical to the economy and directly exposed to the effects of the changing climate. Agricultural greenhouse gas emissions (methane, nitrous oxide and carbon dioxide) currently contribute over half of Aotearoa New Zealand's gross emissions. Farmers and growers are already feeling the impacts of a changing climate. Across Aotearoa New Zealand, extreme weather events, flooding and droughts are increasing the pressures faced by farmers and growers.

Climate change is increasing the frequency and severity of droughts in Aotearoa New Zealand. The primary sector is particularly vulnerable. From 2007 to 2017, drought cost the country around \$720 million.

For this reason, the Government has set domestic emissions reduction targets that align with limiting global warming to 1.5 degrees Celsius. These targets are:

- net-zero emissions for long-lived greenhouse gases by 2050
- a 24 per cent to 47 per cent reduction below 2017 in biogenic methane emissions by 2050
- a 10 per cent reduction below 2017 biogenic methane emissions by 2030.

Aotearoa New Zealand is using an emissions-budgeting system to meet these targets. The first three emissions budgets (2022–2025, 2026–2030, 2031–2035) were published in May 2022.<sup>2</sup> These include sub-budgets that specify the emissions reductions required from agriculture.

Globally, markets are increasingly expecting sustainable, low-emissions products. Food that consumers perceive to be produced in a sustainable way attracts a significant price premium in global markets. Reducing the emissions footprint of Aotearoa New Zealand's agricultural exports protects the country's international brand and upholds its reputation for producing high-quality, trusted food and fibres.

Some farmers and growers are working to reduce on-farm agricultural emissions by taking steps such as having fewer but more productive animals, managing fertiliser use more efficiently, and changing the nature of their land use. An agricultural emissions-pricing system will provide farmers and growers with an economic incentive to transition to low-emissions land uses, adopt new mitigation technologies or improve productivity.

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<sup>2</sup> Ministry for the Environment. Undated. *Emissions budgets and the emissions reduction plan*. Retrieved from <https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/emissions-budgets-and-the-emissions-reduction-plan/> (accessed 1 September 2022).

Pricing agricultural emissions is a key action in the emissions reduction plan<sup>3</sup>. This means the agriculture sector will play its part in reducing its emissions, alongside other emitting sectors of the economy that face a price on their emissions via the NZ ETS.

## **Government decisions to date on pricing agricultural emissions**

In 2018, the Interim Climate Change Committee (Interim Committee) was established and tasked by the Government with developing evidence, analysis and recommendations for reducing agricultural emissions. The Interim Committee considered options to deliver efficient emissions reductions consistent with a just transition, including emissions pricing in the NZ ETS.

In its recommendations report, delivered on 30 April 2019, the Interim Committee determined that the NZ ETS was not the right mechanism to price agricultural emissions. The Interim Committee recommended pricing agricultural emissions in the NZ ETS at a processor level, as an interim step, and using the revenue raised to fund a transition to a farm-level levy system in 2025.

In response to the Interim Committee's recommendations, the Food and Fibre Leaders Forum proposed that a government–sector–Māori partnership be established to develop recommendations on a farm-level pricing system as an alternative to the NZ ETS.

The Government agreed to establish a formal sector–government partnership as an interim option to take action to reduce agricultural emissions and support the transition to farm-level emissions pricing from 2025. The He Waka Eke Noa – Primary Sector Climate Action Partnership (the Partnership) was then established in 2020.

Pricing agricultural emissions at the processor level in the NZ ETS was legislated in the CCRA as the regulatory backstop, in the event farm-level pricing in 2025 is not feasible. A set of implementation milestones (outlined in [appendix two](#)) was legislated to track progress towards farm-level pricing in 2025.

## **2.2 Why is the Government making decisions now?**

Section 215 of the CCRA sets out an obligation for the Minister of Climate Change and Minister of Agriculture to prepare and make publicly available a report that outlines an agricultural emissions-pricing alternative to the NZ ETS. The section 215 report is a direct response to the Partnership's recommended proposal.

The report must include certain matters, including advice provided by the Commission on assistance, and must be made publicly available by 31 December 2022. To ensure such a system is in place by 2025, the Government needs to decide whether to progress with an alternative pricing system or activate the NZ ETS backstop.

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<sup>3</sup> Ministry for the Environment. 2022. *Aotearoa New Zealand's first emissions reduction plan*. Wellington: Ministry for the Environment.

Through this consultation document, the Government is seeking feedback on the proposed alternative system design to incorporate into the final report that will inform Cabinet decisions. [Appendix one](#) summarises what will be addressed in the report.

## **He Waka Eke Noa – Primary Sector Climate Action Partnership**

On 31 May 2022, the Partnership delivered its final report to the Ministers, recommending a farm-level, split-gas levy pricing system is implemented as an alternative to the NZ ETS.

The Partnership's pricing system was presented to the Ministers by primary sector leaders and the Federation of Māori Authorities. This is the Partnership's preferred option for creating incentives to reduce agricultural emissions, in line with Aotearoa New Zealand's domestic targets, while also maintaining the economic viability of the agriculture sector.

Under the Partnership's farm-level levy, they propose farmers and growers:

- report on and pay for their emissions annually
- pay one levy price for their short-lived greenhouse gas emissions (methane from livestock)
- pay a separate levy price for long-lived greenhouse gas emissions (nitrous oxide from livestock and synthetic fertiliser and carbon dioxide from urea)
- receive an incentive payment for uptake of approved actions that reduce emissions, such as use of technology like a methane inhibitor
- receive a payment or credit for on-farm sequestration, including vegetation that is not eligible for registration in the NZ ETS.

The Government is an active participant in the Partnership, and supported the delivery of the final recommendations report, but is not a signatory.

The Partnership continues to work towards achieving the legislated implementation milestones outlined in [appendix two](#). It is also working to establish a wider behaviour-change framework to support farmers and growers to respond to a price on emissions.

## **2.3 Other advice on agricultural emissions pricing**

In responding to the Partnership's proposal, the Government considered advice from the Commission and other key reports, economic modelling and analysis. A summary of the Commission's advice is outlined below.

### **Climate Change Commission – Agricultural assistance**

On 31 May 2022, the Commission delivered independent advice to the Government on 'what assistance, if any, should be provided to participants of an agricultural emissions-pricing system'. This advice was requested under section 5K of the CCRA,<sup>4</sup> and must be considered by the Ministers when making decisions on the pricing system.

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<sup>4</sup> See [Climate Change Response Act 2002, s 5K](#).

The Commission advised that:

- assistance is important if a high price is used to generate a price signal to reduce emissions
- certain groups would benefit from targeted assistance more than others, for example, iwi and Māori
- an output-based methodology for structured assistance is likely to be the most effective and feasible option in the short term. However, in the longer term, a land-based methodology for structured assistance could be effective, once additional work is done to make it feasible.

These recommendations, the analysis behind them, and additional advice on the topic of assistance can be found in the Commission’s final report.<sup>5</sup>

## Climate Change Commission – Agricultural progress assessment

On 30 June 2022, the Commission delivered an independent review to the Government on farmers’ and growers’ readiness to comply with farm-level emissions pricing from 2025. This was required under section 220 of the CCRA and based on the implementation milestones outlined in [appendix two](#).

This advice focused on three main areas.

- Whether farmers and growers will be ready to comply with farm-level emissions pricing from 2025. The Commission concluded that farmers and growers will be sufficiently ready in some areas but not others.
- A comparison of the likely effectiveness of the Partnership’s farm-level levy proposal against the NZ ETS backstop and farm-level NZ ETS options in the CCRA. The Commission concluded a pricing system that built on the Partnership’s farm-level levy would be most effective but changes to its proposal were necessary.
- Various other conclusions and recommendations for the Government, including on next steps, how to make an effective farm-level pricing system work by 2025, and a range of other considerations.

The Commission found that, with significant effort, implementing a streamlined version of the Partnership’s proposals would be possible by 2025. More detail on the review can be found in the Commission’s final report.<sup>6</sup>

## 2.4 Partnership with Māori and iwi–Māori views

In upholding the principles of the Treaty of Waitangi | Te Tiriti o Waitangi (Te Tiriti), the Government recognises the importance of the partnership with Māori throughout the transition to a low-emissions, climate-resilient economy. Advice from both the Partnership

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<sup>5</sup> Climate Change Commission | He Pou a Rangi. 2022. *Advice on Agricultural Assistance: How financial assistance could support Aotearoa New Zealand’s agricultural emissions pricing system*. Retrieved from [www.climatecommission.govt.nz/our-work/advice-to-government-topic/agricultural-emissions/agricultural-assistance/report-advice-on-agricultural-assistance/](http://www.climatecommission.govt.nz/our-work/advice-to-government-topic/agricultural-emissions/agricultural-assistance/report-advice-on-agricultural-assistance/) (accessed 1 September 2022).

<sup>6</sup> See footnote 55.

and Commission, to date, echoes this importance, and the Government agrees with and acknowledges the accountability this commentary has provided.

The Crown also has obligations to Māori through instruments of statute, case law and settlement agreements. Within Aotearoa New Zealand's first emissions reduction plan is a commitment to empowering Māori and working together, as equal partners, on a climate response.

The Government acknowledges the intrinsic relationship Māori have with te taiao and recognises the close connection through whakapapa between tangata and whenua. For these reasons, the Government wants to ensure Māori are involved and decisions are informed by this partnership.

The Government has heard consistently that mitigating and adapting to climate change are significant priorities for Māori, as well as recognition for the actions they take on farms.

Through engagement on agricultural emissions pricing since 2019, Māori have strongly expressed the importance of the Crown prioritising and upholding the principles of Te Tiriti. This includes the need for genuine engagement, recognition of te ao Māori, te taiao and mātauranga Māori, and support for Māori farmers, growers and land owners to participate in a pricing system.

The top five areas Māori have identified as important in the design of a pricing system are:

- the ability for Māori farmers, growers and land owners to make decisions and be recognised for their actions on farm
- enabling farmers, growers and land owners to collectivise for reporting emissions and receiving incentives
- recognising sequestration
- inclusion of Māori in system governance decisions (including determining how revenue from whenua Māori is recycled)
- recognising the additional barriers and administrative burden faced by Māori farmers, growers and land owners.

The Government wants to build a system that is cognisant of these areas of importance by partnering with Māori through the engagement phase and beyond, to ensure the policy options, and design and implementation of the pricing system, are fit for purpose. Figure 1 outlines the role of Māori in the agriculture sector's transition to a low-emissions future.

Figure 1: Role of Māori in the agriculture sector's transition to a low-emissions future



## 2.5 How does agricultural emissions pricing fit with other government work programmes?

In May 2022, the Government published its economy-wide [emissions reduction plan](#). It includes four main actions for supporting the agriculture sector to respond to new farm-level pricing from 2025. These are:

- investing \$339 million to accelerate the development and uptake of mitigation technologies that can be used on farms

- investing \$35 million in specialised farm advisory and extensions services to support farmers to make changes and reduce emissions on farms
- establishing tikanga-based programmes to support the needs and aspirations of Māori
- supporting farmers and growers to transition to low-emissions land uses and systems, for example, through investment in regenerative agriculture practices.

The plan also outlines strategies and policies to achieve the emissions reductions budgets and domestic emissions reduction targets across Aotearoa New Zealand's economy, including the agriculture sector.

The Government's *Fit for a Better World* roadmap<sup>7</sup> also outlines how sustainability goals align with the Government's targets to increase the productivity and employment in the food and fibre sectors. The roadmap outlines the actions, investment and resources that will combine to accelerate the transformation for building a better economy over the next 10 years.

The work programme outlined in [appendix three](#) provides details of where the Government's wider agricultural work programme links with the action areas. The Government is seeking to line up these initiatives, where appropriate, to ensure the sector is supported to achieve its environmental sustainability goals and minimise the administrative burden for farmers and growers. In particular, the Government will continue to explore ways to align the implementation and reporting that will be required by upcoming government policy.

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<sup>7</sup> Ministry for Primary Industries | Manatū Ahu Matua. Undated. *Fit for a Better World*. Retrieved from <https://fitforabetterworld.org.nz/about/our-roadmap> (accessed 1 September 2022).



# Section 3: The Government's proposed policy designs

## 3.1 Objectives for pricing agricultural emissions

The Government has identified three objectives for a pricing system for agricultural emissions for all of Aotearoa New Zealand. The system needs to be:

- effective – in incentivising emissions reductions that contribute to achievement of the country's domestic and international targets
- practical – in being able to be implemented within statutory timeframes and established, operated and modified in a cost-effective manner
- equitable – within the agriculture sector, between the agriculture sector, other industries and the broader economy, and in terms of the effect on Māori agribusiness and Māori overall, including Māori aspirations.

These objectives are consistent with the nine general principles for agricultural emissions pricing proposed by the Commission in its Agricultural Progress Assessment report.<sup>8</sup>

## 3.2 Overview of the Government's proposed pricing system

The Government is consulting on an agricultural emissions pricing framework to commence in 2025. The framework is a modified version of the farm-level, split-gas levy.

The Government is also consulting on:

- an interim processor-level levy as a transitional step if the farm-level levy is not ready in 2025 (see the section [Proposed interim processor-level levy](#))
- a proposed pathway for how sequestration from on-farm vegetation could be recognised in 2025 and in the medium-to-long term via the NZ ETS (see [section 3.5 Recognition of sequestration from on-farm vegetation](#))
- options for how emissions from the application of synthetic nitrogen fertiliser could be priced, either within the farm-level levy or via the NZ ETS (see [section 3.6 Options for pricing synthetic nitrogen fertiliser emissions](#)).

The Government agrees with the Partnership and the Commission that a farm-level emissions pricing system is the best approach to incentivise farmers and growers to reduce agricultural emissions.

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<sup>8</sup> Climate Change Commission | He Pou a Rangi. July 2022. *Full report: Progress towards agricultural emissions pricing: Assessing how ready farmers and the agriculture sector are for emissions pricing, and advice on what work still needs to be done*. Retrieved from <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/agricultural-emissions/agricultural-progress-assessment/> (accessed 20 September 2022).

Achieving Aotearoa New Zealand's domestic split-gas targets requires gross emissions from the agriculture sector to fall. The proposed farm-level, split-gas levy is expected to deliver these gross emission reductions. Economic modelling suggests that the levy could achieve sufficient emissions reductions to meet or exceed our target to reduce biogenic methane emissions to 10 per cent below their 2017 levels by 2030.

The farm-level levy also puts emissions at the forefront of on-farm investment decisions and other important farm business considerations. Pricing agricultural emissions at farm level gives farmers and growers the autonomy and flexibility to determine the most efficient, cost-effective mitigation practices for their specific farms.

The proposed farm-level levy draws from the advice provided by the Commission and broader analysis and evidence. It also incorporates several elements of the Partnership's proposal but amends some components that may undermine system effectiveness or affect the ability to implement the levy.

## Government's modified farm-level levy pricing system proposal

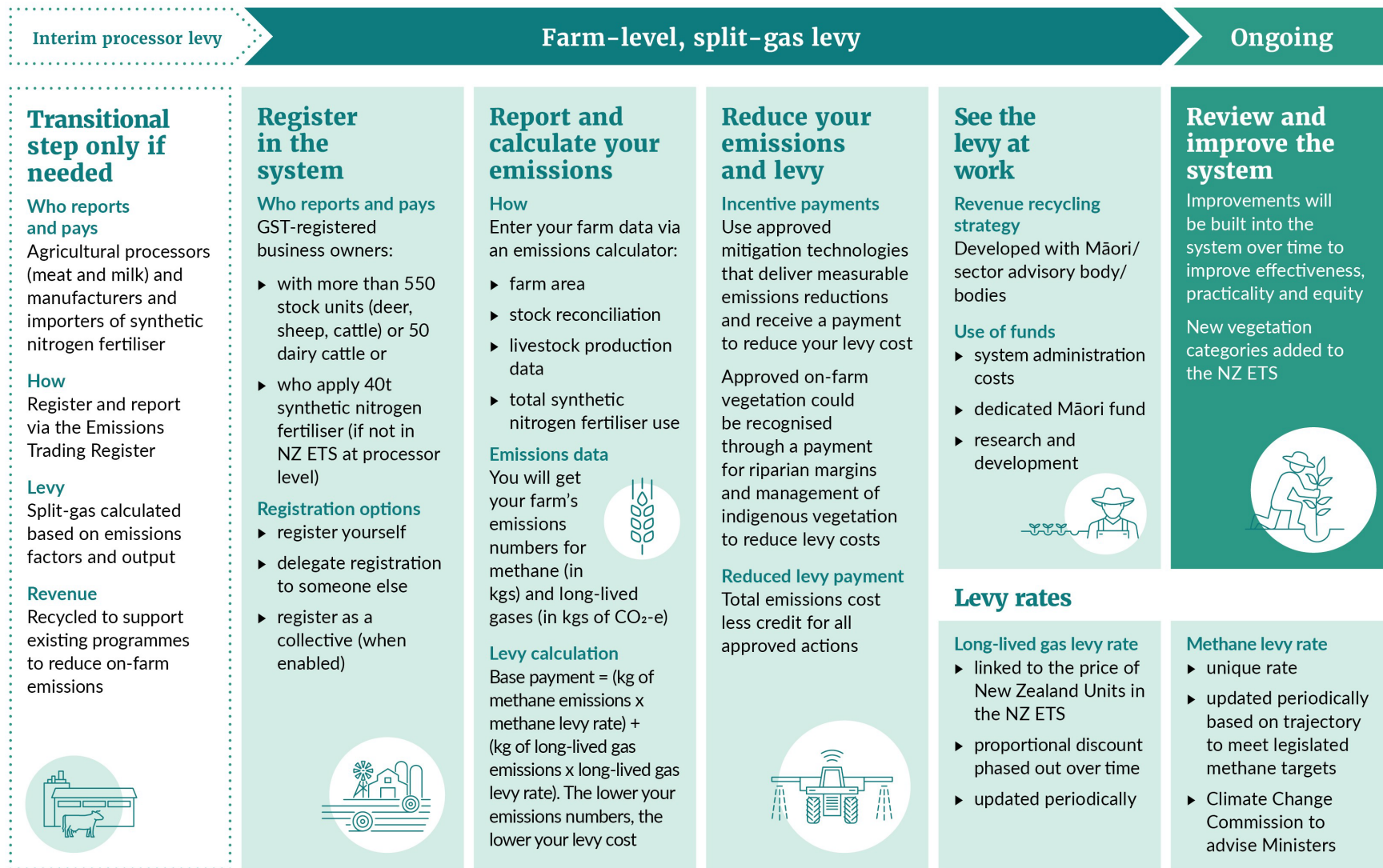
The Government's proposed modified version of the Partnership's farm-level, split-gas levy consists of the following elements:

- the business owner(s) of farms above a fertiliser use or stock number threshold has the legal responsibility to report emissions annually using a single calculation engine and simple reporting method
- separate levy prices are set for long-lived gases and biogenic methane
- long-lived gas prices are set annually and linked to the New Zealand Unit (NZU) price, with a proportional discount
- biogenic methane levy prices are reviewed periodically (annually or three yearly) based on progress against emissions targets and advice from the Commission
- incentive payments are funded through revenue raised, and will be available for a range of mitigation technologies and practices, to reduce emissions. These incentives will act as a proxy for assistance and provide an opportunity to offset liabilities owed through the pricing system. Detailed reporting and a wider variety of mitigations will be introduced over time
- any revenue raised from the pricing system, once incentive payments are netted off, would be used for administration where it is appropriate, and remaining funds would be subject to the revenue recycling strategy pathway is proposed for how sequestration from on-farm vegetation could be recognised in 2025 and in the medium-to-long term via the NZ ETS
- an advisory body (or bodies) consisting of Māori and sector representatives will advise on the use of system revenue and funding to support Māori land owners and agribusiness. Ministers will be accountable for how the revenue is spent. [Figure 2](#) outlines the proposed farm-level levy pricing system.

### Question 1

Do you think modifications are required to the proposed farm-level levy system to ensure it delivers sufficient reductions in gross emissions from the agriculture sector? Please explain.

Figure 2: Proposed farm-level levy pricing system



## Tradeable methane quotas

The Government also considered an alternative pricing option: pricing biogenic methane emissions via a separate market-based system and pricing long-lived gases in parallel via the NZ ETS. The Government is not progressing tradeable methane quotas at this stage.

Under a tradeable methane quota system:

- a tradable methane quota system would manage the volume of methane emissions rather than their price, in contrast to a levy system, which manages price rather than volume
- a total allowable volume of methane emissions would be set on an annual basis with reference to Aotearoa New Zealand's domestic emissions reduction targets. It would reduce over time
- no trading or conversion would occur between NZUs (in the NZ ETS) and the Methane Units (MUs) (in the tradeable methane quota system)
- farmers (the market) set the emissions price via the supply and demand of MUs
- farm businesses above a stock number threshold would receive an annual methane quota made up of MUs
- the MUs would be valid for a year and could be traded between farm businesses via a secondary market
- farmers would be required to calculate their biogenic methane emissions and surrender MUs to cover these emissions
- farmers would receive MUs via an auction, free allocation or the secondary market.

The main benefit of tradeable methane quotas is it is volume rather than price based. Therefore, it is the most certain way of ensuring Aotearoa New Zealand achieves its domestic emissions reduction targets. It is also far more responsive than a levy; levies would only respond to progress against targets one-to-two years after the fact. A market-based system would also avoid the need for a complex price-setting process.

It creates a strong marginal price on emissions, meaning farmers would have a price-driven incentive to reduce their greenhouse gas emissions because doing so would result in significant cost savings. Farmers who reduce their emissions below the target would have an asset they could trade. Under the levy system, farmers who reduce their emissions would reduce their levy liability but would not generate revenue.

Tradeable methane quotas, however, may be more complex and costly to administer and participate in than a farm-level levy. It includes implementing a free allocation regime, which poses significant inter-sector equity issues and would be complex to implement. These complexities mean it would be extremely difficult to implement by 2025.

While the Government recognises the benefits of a tradeable methane quota system, due to disadvantages stated above, it has decided not to progress this option. Nevertheless, the Government welcomes feedback on the merits of tradeable methane quotas as a potential mechanism that could be introduced in the future.

## Question 2

Are tradeable methane quotas an option the Government should consider further in the future? Why?

### **Synthetic nitrogen fertiliser**

The Government has identified two options for pricing emissions from the application of synthetic nitrogen fertiliser.

- Option 1: Price these emissions at farm level via the farm-level levy and include this in a farmer's or grower's on-farm emissions bill.
- Option 2: Manufacturers and importers of synthetic nitrogen pay for the emissions from the application of nitrogen fertiliser in the NZ ETS.

The two options are described in further detail in [section 3.6 Options for pricing synthetic nitrogen fertiliser emissions](#).

### **Proposed interim processor-level levy**

Implementing a farm-level pricing system in 2025 will require a significant amount of work, relying on a tightly sequenced series of events. The Government is concerned about the risk of farmers and growers, or the supporting systems, not being ready for 2025. A delay in introducing a price on agricultural emissions could make it more difficult and costly to achieve the emissions reductions the Government has committed to achieve by 2030.

As contingency against this risk, an interim processor-level levy is proposed as a transitional step, if the farm-level system cannot be implemented in 2025. The Minister of Climate Change and Minister of Agriculture (the Ministers) would be able to activate this, if it occurs.

The decision about which pricing system will be implemented in 2025 would need to be made during 2023. Further details can be found in [section 3.8 Interim processor-level levy](#).

### **NZ ETS backstop (processor-level option)**

The NZ ETS is a credible and practical method of pricing agricultural emissions that results in emissions reductions overall. However, it is not the most effective way of incentivising individual farms to make changes to reduce their on-farm emissions.

Under the CCRA, agricultural emissions pricing via the NZ ETS will take effect unless an alternative pricing system is implemented by 1 January 2025. To implement the alternative system, the Government will need to create new legislation and repeal the relevant parts of the CCRA.

Agricultural processors have reported agricultural emissions through the NZ ETS since 2011 but are currently excluded from the requirement to surrender NZUs to pay for these emissions. Under the NZ ETS backstop, agricultural processors for fertiliser and meat and milk processing would have to pay for agricultural emissions in the NZ ETS from 1 January 2025. Details can be found in.

The NZ ETS backstop would be the most practical and efficient system to establish by 1 January 2025, because primary legislation, reporting and compliance systems are already in place. It would allow for trade-offs across the whole economy. The cost of emissions and the relative

benefit of choosing lower emissions activities could be weighed up across sectors, to prioritise lowest-cost emissions abatement.

Pricing at processor level would not, however, directly incentivise and reward farm-level changes that result in emissions reductions. However, recycled revenue could be used to support on-farm behaviour change, and processors would have choices about how they pass on costs to farmers and growers through their incentive structures.

The NZ ETS does not currently provide for split-gas reporting and pricing, which is misaligned with the domestic gross reduction target for biogenic methane. It does, however, align well with emissions budgets and the Nationally Determined Contribution (NDC), both of which are expressed as all-gas net goals.

### Question 3

Which option do you prefer for pricing agricultural emissions by 2025 and why?

- (a) A farm-level levy system including fertiliser?
- (b) A farm-level levy system and fertiliser in the New Zealand Emissions Trading Scheme (NZ ETS)
- (c) A processor-level NZ ETS.

## 3.3 When would agricultural emissions pricing come into effect?

The CCRA sets a date of 1 January 2025 for agricultural pricing to commence,<sup>9</sup> which aligns with all other sectors in the NZ ETS and calendar-year greenhouse gas inventory reporting.

Both the Partnership and the Commission are of the view that a simplified or basic farm-level pricing system could be implemented by 2025. While the Government is committed to implementing agricultural pricing in 2025, a lot of work is required to implement a farm-level pricing system by 2025. The proposal is therefore to develop an interim processor-level levy system as a transitional step, in the event a farm-level pricing system is not possible in 2025.

## 3.4 Technical design of a farm-level agricultural emissions pricing system

This section sets out in further detail who would be required to report on and pay for their emissions as part of the proposed farm-level levy. It also explains where payment and reporting obligations will differ, depending on the option that is chosen for pricing synthetic nitrogen fertiliser.

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<sup>9</sup> See [Climate Change Response Act 2002, s 2A and s 219](#).

## What is the emissions price imposed on?

- The Partnership’s recommendation is that farm-level pricing applies to specified types of farm businesses. The Partnership provided specifications that capture all farms that emit over around 200 tonnes CO<sub>2</sub>-e per year.
- The Government’s proposal largely aligns with the Partnership recommendation. The Government proposes to define farmers and growers who must report emissions and pay the levy as those who are goods and services tax registered (to define the business owner) and meet one of the following thresholds:
  - 550 stock units (inclusive of sheep, cattle and deer, calculated on a weighted annual average basis); or
  - 50 dairy cattle; or
  - apply over 40 tonnes of nitrogen through synthetic nitrogen fertiliser.

If the emissions from the application of synthetic nitrogen fertiliser are priced in the NZ ETS, the threshold for synthetic nitrogen fertiliser would be excluded from the farm-level pricing system definition above.

This proposal is largely the same as the Partnership’s recommendation, except it initially does not impose the pricing system’s obligation to report and pay emissions on the minor-emitting livestock sectors (swine, poultry and goats). The exclusion of minor-emitting sectors in the pricing system could be reviewed over time, to account for changes in their emissions profiles.

### *Minor-emitting livestock sectors*

Minor-emitting sectors, including swine, poultry, goats, horses, alpacas, llamas, mules and asses, currently contribute less than 0.5 per cent of Aotearoa New Zealand’s agricultural emissions (according to the 2022 Greenhouse Gas Inventory<sup>10</sup>). The Government is proposing that swine, poultry and goats, alongside the other minor-emitting livestock sectors already excluded by the Partnership’s proposal (ie, alpacas, horses, llamas, mules and asses) are initially excluded from the farm-level levy. It is noted that significant engagement has not been undertaken with these sectors in the development of the Partnership’s recommendations, to ensure the proposals are feasible to implement by 2025.

The Government believes the costs associated with not being able to accurately estimate a farmer’s levy – with limited emissions-reductions methodologies available and the additional complexities for both the information technology (IT) build and reporting requirements – mean it is best to exclude minor-emitting sectors from the farm-level levy when it comes into force in 2025.

Minor-emitting sectors will still be subject to the pricing on synthetic nitrogen fertiliser emissions, if priced at processor level via the NZ ETS, or if farmers and growers meet the proposed farm-level synthetic fertiliser application threshold.

The Government would like to continue conversations with these minor-emitting livestock sectors, to understand the impacts and implications of being included or excluded from the farm-level levy.

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<sup>10</sup> Ministry for the Environment. 2022. *New Zealand’s Greenhouse Gas Inventory*. Wellington: Ministry for the Environment.

## Fertiliser

Farmers and growers who use fertiliser are currently defined in the CCRA as those who carry out purchasing, other than for on-selling, synthetic fertiliser containing nitrogen for application to land.<sup>11</sup> The Government is consulting on two options, namely whether:

- synthetic nitrogen fertiliser emissions should be included in the farm-level levy for those who are GST registered and apply over 40 tonnes of nitrogen per year through synthetic nitrogen fertiliser, or
- fertiliser manufacturers and importers should face obligations under the NZ ETS.

For further detail, see [section 3.6 Options for pricing synthetic nitrogen fertiliser emissions](#).

## Who holds the legal responsibility on the farm for reporting and paying for emissions?

- The Partnership recommended that the farm business owner should hold ultimate legal responsibility for reporting and paying for emissions.
- In the case of sequestration being recognised, the Partnership recommended that a business owner must have permission from the land owner.
- The Government proposes to adopt the Partnership's recommendations.

This arrangement, where business owners are responsible for reporting and paying emissions, rather than land owners, incentivises emissions reductions within the farming business operation. It provides recognition of on-farm actions directly to the person making decisions about stock management and fertiliser application. Therefore no emissions cost will be incurred for land owners who lease their land to a third party for agricultural activities; however, lessees may ask land owners to provide them with additional information (such as effective farm area). It is likely additional research will be required to improve the accuracy of this information. For this reason, further feedback is sought on these impacts and implications.

The arrangement is also suited to leased land, sharemilking arrangements and long-term leased land (eg, land administered by the Office of the Māori Trustee | Te Tumu Paeroa, or Crown- and council-owned land). Crown pastoral leaseholders, however, may have barriers to land-use change, due to the protection of inherent values and the environmental outcomes sought by the Crown Pastoral Land Act 1998.<sup>12</sup>

An alternative that was considered was making the land owner responsible for reporting and paying for emissions, with the option to delegate to the business owner. Land owner responsibility creates the greatest incentives for sequestration, but would add significant costs and liabilities for leased land arrangements (both short and long term) and sharemilkers. For this reason, this option has not been proposed.

In keeping with the Partnership, the Government recognises that alternative types of ownership and business structures exist for which these definitions may have implications.

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<sup>11</sup> See [Climate Change Response Act 2002, sch 3, pt 5, subp 2](#).

<sup>12</sup> See [Crown Pastoral Land Act 1998](#).



For example, if the pricing system came into force before a lease is renewed, practical transitional arrangements may be needed.

Your feedback is sought on these impacts and implications.

For example, under the Sharemilking Agreements Act 1937,<sup>13</sup> the farm owner is bound to provide specified information to the sharemilker that includes most of the information that the proposed pricing system would require to be reported, except for detail related to farm area (ie, effective farm area and potentially eligible (non-NZ ETS) sequestration).

The Government is considering whether any changes to this legislation would be required to support sharemilkers to have access to the necessary information (such as farm maps) to meet their reporting obligations under a farm-level pricing system.

Another example is where the pricing system came into force before a lease is renewed. In these cases, practical transitional arrangements may be needed.

Contract milkers and/or sharemilkers who do not own the herd would not have any reporting responsibilities under this proposal because this would lie with the owner of the herd. However, implications for some sharemilkers, where both the land owner and sharemilker own livestock within the herd, will need to be considered. The default position would be that both parties are responsible for their respective businesses' emissions, but allowing for formal transfer to one party, where there is mutual agreement, may also be beneficial.

Your feedback is sought on these impacts and implications.

The Government proposes allowing the business owner to delegate to a person or entity (eg, a farm advisor or chartered accountant). This would work in a similar way to the Inland Revenue system, where someone can be nominated as an agent to act on behalf. Obligations or responsibilities would remain with the farm business, but a nominated person would be able to act as an agent: making enquiries, completing forms, receiving statements, and arranging payments on behalf of the farm business.

## Collectives

Introducing reporting and payment obligations for collectives is an important feature of a farm-level pricing system. Enabling this will recognise Māori land-owner structures and allow farmers and growers who own several businesses to report and pay for their obligations as one entity.

During discussions, farmers and growers (including Māori land owners) expressed a desire to form collectives, to reduce the administrative burden on governance structures involving multiple land owners and to access any sequestration or offsetting opportunities. This would potentially increase compliance, while also reducing the number of participants in the emissions-pricing system.

The Government is looking into workable ways to allow some collectives (such as Māori agribusiness, iwi, hapū and whānau groups) to be enabled from 2025, with a wider range of collectives to be enabled at a later date.

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<sup>13</sup> See [Sharemilking Agreements Act 1937](#).

## What is a collective?

A collective could be made up of:

- multiple farm businesses under the same management structure and/or same ownership
- multiple farm businesses that wish to report and pay their emissions as one entity.

Parallels exist here to irrigation company groupings, where multiple farming enterprises use the administration systems of the irrigation company to manage water-allocation rights and distribution.

A collective would have one registration that would cover multiple individual enterprises. This would be different from, for example, an agent reporting for each enterprise separately.

It would be necessary to specify who could form a collective. Options could include:

- an agricultural or horticultural business
- members who are in common ownership
- members already enrolled in an Inland Revenue collective
- each member being eligible on their own within the threshold
- where there is agreement (written) by all the members.

## Enabling collectives for Māori agribusinesses

- The Federation of Māori Authorities consistently supported the inclusion of collectives throughout the Partnership's recommendation process.
- The Commission also recognised the importance of collectives to support Māori land owners, particularly in accessing any sequestration offsetting.
- The Government recognises the importance to Māori agribusiness of collective ownership and operation of Māori land.
- The Government seeks your feedback on the best path by which collective reporting and payment obligations could be enabled for Māori agribusinesses in 2025.

The Government proposes continuing to work with its Tiriti partners to understand ways to reduce the administrative burden of agricultural emissions pricing on Māori agribusiness via collectives. This burden is likely to be significantly higher than for other agribusinesses that might want to form collectives, due to the complex ownership and management of Māori land. This tool may also be an opportunity to balance some of the disadvantages Māori businesses have in this area. It is also an opportunity to further the Government's partnership in meeting its obligations under Te Tiriti.

Enabling Māori collectives will be a test bed for how this option might be extended in the future to all who would form collectives.

Several choices are, however, available as to how collectives might be implemented. For example, Inland Revenue recognises Māori authorities as collectives for tax purposes. Allowing those authorities to report as a collective may be a simple path forward, in that they are already formed and of limited number, easing the burden when developing the emissions-

pricing system. However, this may exclude some Māori enterprises that may want to form collectives for 2025. This, and several other aspects of this component of the system, will need to be discussed.

## Enabling collectives for the pricing scheme's broader participants

- The Partnership recommended that any business owner have the option to opt in to a collective to manage their reporting and payment obligations.
- The Government recognises the potential of this recommendation, but considers it requires further development before implementation.

It is likely other groups will also be interested in collective reporting and payment, such as:

- farmers who own multiple farming or growing businesses
- intergenerational ownership within an enterprise
- farmers who wish to offset their emissions with sequestration through vegetation under a separate business they own (if sequestration is included)
- catchment groups
- processors.

The Government recognises the potential benefits to other types of collective. However, the issues around the policy choices are too complex for a wide group of collectives to be included in the pricing system from 1 January 2025. The proposal is therefore to explore enabling a broader range of collectives as a future enhancement to the pricing system.

## Regulating collectives

If collectives are enabled, the Government will need to determine how they will be regulated, including:

- rules over fair distribution of paying the levy
- where responsibility for compliance lies with respect to agents and/or each of the members.

Guidance would need to be given on each of these aspects.

## Registration

Farmers and growers participating in the pricing system will need to register on the system to report their emissions and pay the emissions price. The obligation will extend to recording relevant farm data needed for audit, verification and compliance processes, submitting emissions reports using approved tools, and payment of the requisite levy.

The data required upon registration could include information on ownership, farm address, farm type and size, farming enterprise, stock type and numbers, farm map and GST number(s). This information would then be useful in helping the audit, verification and compliance processes. For agents registering for others, authority to act on behalf would need to be demonstrated. This could involve the completion of a signed agreement submitted with registration.

## Reporting of emissions and payment of an emissions price

Biogenic methane and long-lived gas emissions on farms are impossible to directly measure. They need to be estimated by models that combine farm information on livestock and fertiliser with scientific data on biogenic methane emissions per unit of feed intake, and nitrous oxide or carbon dioxide emissions per unit of nitrogen application to soils.

- The Partnership recommended beginning farm-level pricing with a simple method for estimating on-farm emissions.
- The Partnership also recommended that the reporting system should recognise early adopters.
- The Government's proposals largely align with the Partnership's recommendations. The Government proposes that emissions be calculated with a centralised calculator managed by the implementation agency. The calculator will be updated annually to incorporate new science or proven mitigations.

### Emissions calculation method

The calculation methods for determining the emissions-reporting amounts will be transparent and publicly available. The transparency of the method used to price emissions is crucial: those paying the levy need to know the basis for the calculation of the levy, and to have an opportunity to critique any technical shortcomings and see them addressed.

The Government proposes that emissions be calculated using a centralised calculator managed by the implementation agency. This is to ensure emissions reporting across all farms is standardised and equitable.

Data requirements and the methodology for calculating emissions will be laid out in regulations. These regulations and any changes to them will be consulted upon widely among interested members of farm-levy payers, their representatives, the public and scientific experts.

### Method updates, new mitigations and incentives

As new science and mitigations are proven or become available in Aotearoa New Zealand, they will be incorporated into the pricing method and incentive system. An annual process will be established for this, which could be through the existing Agricultural Inventory Advisory Panel or the establishment of a new technical advisory panel. The panel would provide scientific advice on potential improvements to the updated methods and new mitigations.

The Government will work to ensure the science that underpins the agriculture emissions method reflects the science underpinning Aotearoa New Zealand's Greenhouse Gas Inventory. Differences are expected between the methods used to estimate emissions in the farm-level pricing system and the Greenhouse Gas Inventory, due to the different scales at which both operate and differences in data available at farm and national levels.

Because the methods used to estimate emissions will be in regulations, any proposed changes that affect these will then go out for public consultation and may be amended because of submissions received. Cabinet will ultimately agree to any regulatory changes.

It should be acknowledged that there is a lot of investment in agricultural greenhouse gas mitigations, but some benefits to farmers and growers will not be available until the medium-to-long term.

The Partnership recommended that, for new actions or technologies (ie, those not available before the first year of reporting), all emissions reductions should be additional. For existing actions, such as the use of low-protein or low-methane forage crops, all existing and additional emissions reductions should be rewarded with incentive payments. This approach could help recognise early adopters and avoid creating perverse incentives to delay actions until these mechanisms are put in place.

The He Waka Eke Noa programme milestones around emissions reporting and farm planning also seek to enable farmers to understand their emissions profile and explore opportunities to reduce it. For instance, farm plans could be used as a mechanism for applying the approved list to each farm and providing an implementation timeline for activities that are long term in nature. Tracking the sector progress towards these milestones could also prompt early adoption of technologies and showcase the sector commitment to emissions reduction.

To ensure the mechanism for incentivising on-farm emissions reduction is equitable and does not create perverse incentives to delay action, the Government is seeking further feedback on these impacts and implications.

## Data and evidence required for emissions reporting

The proposed data and corresponding evidence requirements for the proposed farm-level levy starting in 2025 include those set out in [table 1](#). Note these data will be subject to further review, to ensure the most appropriate data and sources of evidence are included. Where possible, the Government will seek to align these with data requirements for other purposes (eg, freshwater farm plans and integrated farm plans).

**Table 1: Data and evidence requirements for emissions reporting**

Input	Data	Evidence available on request
<b>Farm area</b>	<ul style="list-style-type: none"> <li>Total area in hectares</li> </ul>	<ul style="list-style-type: none"> <li>Geographic Information System farm map</li> <li>Titles</li> <li>Lease agreements</li> </ul>
<b>Livestock reconciliation</b>	<ul style="list-style-type: none"> <li>Stock opening and closing numbers by stock type and class</li> <li>Entry and exit date of stock purchased</li> <li>Stock sold by stock type and class</li> </ul>	<ul style="list-style-type: none"> <li>Livestock trading statement</li> <li>Receipts of stock sales and purchases</li> <li>Lambing and/or calving records</li> </ul>
<b>Livestock production</b>	<ul style="list-style-type: none"> <li>Wool, velvet and/or milk production</li> </ul>	<ul style="list-style-type: none"> <li>Production receipts from processors</li> </ul>
<b>Nitrogen fertiliser</b>	<ul style="list-style-type: none"> <li>Amount purchased and type: <ul style="list-style-type: none"> <li>urea and other nitrogen fertilisers</li> <li>organic nitrogen fertilisers</li> <li>coated nitrogen fertilisers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Receipts from fertiliser companies</li> </ul>

Meat production data is more challenging to incorporate into a simple reporting method. This is because the carcass weights of livestock sent to slaughter do not accurately represent the liveweight and liveweight gain for animals on farms. Many farms do not sell all (or any) of their livestock to meat processors. Industry averages (at national and/or regional level) based on animal type and class will instead be used when calculating livestock emissions.

The Partnership recommended optional inclusion of farm slope in the simple method. Including the effect of slope class on nitrous oxide is an element the Government does not think will be ready for 2025. Spatial mapping of slopes on farms and then allocating the deposition of nitrogen in dung and urine to different slope classes within farms will likely be too long and complex for inclusion in the first version of the simple emissions methodology. It is the Government's intent to move beyond this simple methodology (to the extent this is sensible), as soon as practicable (see discussion under [Detailed reporting](#)).

## Detailed reporting

- The Partnership recommended a more detailed emissions-estimation method should be developed and put in place by 2027. More detailed emissions reporting could improve the accuracy of farmers' and growers' emissions reporting and the effectiveness of the system, by recognising and incentivising a wider range of on-farm mitigations.
- The Government agrees with this recommendation. It intends to move beyond the simple calculation method as soon as practical to recognise more mitigation actions and improve the accuracy of emissions-reporting estimates. This could involve improvements to the simple reporting method described above and adoption of the proposed detailed method.

The proposed detailed reporting method would require farmers to provide additional data, capturing a more granular emissions profile through the inclusion of farm-specific livestock weights, and production and feed type and quality data, rather than applying industry averages. Additional information that could be required includes:

- animal liveweight and reproduction data, such as:
  - animal liveweight and liveweight gain per stock class
  - planned start of mating
  - weaning percentage
  - number of replacements retained post-weaning
  - deaths
- feed type, including:
  - pastures and forage type and quality
  - supplementary and imported feed type and quality
  - start and end of grazing, including stock type and number
- farm slope.

Detailed reporting will require additional time and effort for many farmers to record, and for regulators to audit when necessary. While there are possible pricing benefits for farmers (eg, recognition of a wider range of emissions-reduction strategies), this level of data provision also imposes costs on farmers and the implementation agency. Further development and analysis are needed on the detailed method, before it is implemented.

## Reporting and payment timing

- The Partnership recommended that farms' emissions-reporting periods should be aligned with the farm businesses' financial reporting year end dates.
- The Government proposes to adopt the Partnership's recommendation with minor adjustments.

The Government proposes that farmers and growers will face their first emissions bill accounting for reported emissions **from** 1 January 2025 until the next end of their financial year.

Part-year levy reporting and payments will be needed where initial mismatches exist between financial reporting year end dates and the initial emissions-reporting date. Enabling this will ensure all businesses are treated equally.

For example, in 2025, a farm with financial reporting on a year-to-30 September basis would report emissions from 1 January 2025 to 30 September 2025, and pay levies for this period after reporting.

Part-year reporting and levy payments will also provide for farm business amalgamation or disestablishment (farm sales, purchases and leasing arrangements) and situations where farm businesses elect to change their financial reporting year end date.

Farms would be given a specified period to report from their reporting year end date. Payment would have to be made within a specified period of the reporting year end date, or penalties would be faced. This could include late reporting or payment fees and interest on any outstanding payment.

### Question 4

Do you support the proposed approach for reporting of emissions? Why, and what improvements should be considered?

## Setting the agricultural emissions price

- The Partnership recommended a split-gas levy with separate levy rates for short- and long-lived gases, reflecting the different nature of the gases and Aotearoa New Zealand's split-gas targets.
- The Government proposes to adopt the Partnership's recommendation.

Long-lived gas emissions from agriculture are nitrous oxide from livestock (urine and dung), synthetic fertiliser, and carbon dioxide from urea. Short-lived gas emissions from agriculture are methane from livestock.

## How would levy prices be set for biogenic methane and long-lived gases?

- The Partnership recommended the levy price for long-lived gas emissions should initially be set at the level needed to fund necessary expenditure, including sequestration,

incentive discounts, research and development for long-lived gases, and a share of operating costs.

- The Partnership also recommended a unique levy price for biogenic methane, which would be ultimately decided by the Minister of Climate Change and Minister of Agriculture based on consideration of legislated factors and advice from a system oversight body (explained in more detail in Governance and decision making).
- The Partnership recommended the levy price for biogenic methane and long-lived gas emissions be reviewed and updated every three years.
- The Government proposes:
  - that the Ministers will set the price for the long-lived gas levy and biogenic methane levy, taking into account advice from the Commission and following consultation with iwi, Māori and the agriculture sector
  - the long-lived gas price will be linked to the NZ ETS price, initially with a 95 per cent proportional discount. The discount will reduce by 1 percentage point per year.

Decisions are needed on the initial rates for the levies for long- and short-lived gases, and how these levies will be updated over time.

Independence and transparency in the levy-setting process are important to the Government, to create an enduring and credible system. This was an important principle highlighted in the Commission's report. Farmers and growers also provided feedback through the He Waka Eke Noa consultation process on the importance of transparency in the pricing system.

The Government's proposal for setting levy prices departs from the Partnership's recommendations (see [table 2](#)), to ensure the process is independent and durable and levy rates are more aligned with emissions pricing for the broader economy and Aotearoa New Zealand's emissions reduction targets.

### *Who will set the levy prices?*

The Government proposes that the Minister(s) responsible in legislation for the pricing system will set the final long-lived gas and biogenic methane levy prices through regulations. The final decision on levy prices would be informed by advice from the Climate Change Commission and set following consultation with iwi, Māori and the agriculture sector.

### *How will the long-lived gas levy price be set and updated?*

Nitrous oxide and carbon dioxide are long-lived gases. These long-lived gases from agriculture are subject to the 2050 net zero target. The Government has not set a specific reduction target for these agricultural emissions.

Non-agricultural long-lived gases already face a market-determined price in the NZ ETS. Therefore, the Government is proposing to link the levy price for long-lived agricultural gases to the price of NZUs in the NZ ETS market. This provides a transparent and practical basis for determining the long-lived gas levy price.

Under existing settings in the NZ ETS, in 2025, the agriculture sector would receive 95 per cent free allocation of NZUs to offset emissions bills, phasing out by 1 percentage point per year.



To support an equitable transition in a levy-based system, the Government proposes the same percentage be provided as a proportional discount on the levy rate (ie, 95 per cent proportional discount, phasing out by 1 percentage point per year, as would happen if agriculture comes into the NZ ETS).

#### *How often will the long-lived gas levy price be updated?*

The Government proposes that the long-lived gas levy rate is updated annually. This would keep it in line with trends in the NZU price and capture the phase-out of the proportional discount each year. This process will be set out in legislation.

As above, the proportionate discount against the NZU price will initially decrease by one percentage point per year. This annual review will include consideration of whether this phase out rate remains appropriate, or if it should be adjusted.

#### *How will the biogenic methane levy price be set and updated?*

Given the separate gross emissions reduction targets for biogenic methane, the Government agrees with the Partnership's proposal of a unique levy price. The unique price must help to achieve the legislated biogenic methane targets (see [section 2.1 Why is reducing agricultural emissions important?](#) )

The initial price in 2025 will need to put Aotearoa New Zealand on the right path to meet the biogenic methane targets, while minimising adverse effects on the sector. The Commission would also have an advisory role in this process.

The Government proposes that the Ministers would periodically need to assess whether methane emissions were on or off track regarding the emissions targets. If emissions are over- or under-achieving, the Ministers could update the biogenic methane price.

When the Ministers are considering a new levy price, they would need to be satisfied that the new price would be sufficient to achieve Aotearoa New Zealand's biogenic methane emissions targets. Ministers could also consider other factors such as socioeconomic impacts, but these factors would be secondary to the main consideration of ensuring targets are achieved.

The Ministers would be required to seek the advice of the Commission each time the biogenic methane levy was reviewed. Alongside regulations setting the new price, the Ministers could also be required to publish and table before Parliament a report explaining any deviation from the Commission's advice.

#### *How often will the biogenic methane price be updated?*

As described in the [Impacts section](#), the proposed farm-level, split-gas levy pricing system can lead to emissions reductions consistent with Aotearoa New Zealand's legislated biogenic methane targets. However, the system does not impose a cap on biogenic methane emissions – it does not guarantee that we will meet our targets. It is important that the methane levy price is able to respond in the event that emissions do not fall as anticipated.

The Government is considering whether the biogenic methane levy should be updated annually or every three years. Trade-offs exist between these two approaches as set out below. The Government is seeking your views on what option would be more appropriate.

### *Option 1: Every three years*

One option is to set the biogenic methane levy price every three years. Because the biogenic methane levy price is intended to be linked to performance against Aotearoa New Zealand's domestic biogenic methane targets, a three-yearly review cycle provides more time for a response to be observed before the price is updated.

Updating the biogenic methane levy is likely to be a complex and contentious process. A three-yearly cycle would also allow more time for additional procedural steps to be built into the process, to provide rigor and transparency.

On the other hand, a three-yearly update cycle limits the ability of the system to respond quickly. This poses a particular challenge to achieving Aotearoa New Zealand's 2030 targets. If the initial price is set in 2025 and updated every three years, this provides only one opportunity (in 2028) to adjust to ensure emissions reductions are on track. It would also be difficult to respond to events that affect emissions, for example, in 2008, a widespread drought resulted in a 5 per cent reduction in agricultural emissions.

For these reasons, if the Government adopted a three-yearly review cycle, it is considering allowing the Ministers to make out-of-cycle levy adjustments in exceptional circumstances. Such circumstances could include if there was a significant risk targets would not be achieved or if the levy was causing significant economic disruption.

Under this option, the Ministers could also be required to set an escalating price pathway for the three-year period (as opposed to setting a flat price for the period).

### *Option 2: Every year*

A second option is to set the levy price annually. This would allow the Ministers to adjust the price more rapidly if evidence was available that emissions were not reducing fast enough or if the price was driving widespread and excessive land-use conversion away from livestock agriculture instead of on-farm changes to lower emissions from agricultural practices. A responsive system is likely to be particularly important in the period from 2025 to 2030, as the pricing system beds in and the country approaches its first set of emissions targets.

One year may not be enough time to observe the sector's response to the current price (for example, due to the lag in the national emissions inventory described above). The Ministers would instead need to rely on more timely but less definitive indicators of emissions to assess progress and inform their decisions. In years where insufficient evidence is available to change the price, the Ministers could elect to leave it unchanged.

**Table 2: Summary comparison of approaches to levy setting**

	Long-lived gas rate (nitrous oxide and carbon dioxide)	Short-lived gas levy rate
<b>Partnership recommendations</b>	<ul style="list-style-type: none"><li>• Set at level to fund necessary expenditure</li><li>• Update every three years</li></ul>	<ul style="list-style-type: none"><li>• Unique levy rate based on consideration of legislated factors and advice from a system oversight body</li><li>• Update every three years</li></ul>
<b>Government's proposal</b>	<ul style="list-style-type: none"><li>• Link to New Zealand Emissions Trading Scheme price, initially with 95 per cent free allocation,</li></ul>	<ul style="list-style-type: none"><li>• Unique levy rate to meet methane targets</li><li>• Update either:</li></ul>

	decreasing by 1 percentage point each year	– three yearly (exceptional updates allowed)
	• Update annually	– annually

### Question 5

Do you support the proposed approach to setting levy prices? Why, and what improvements should be considered?

## Transitional support

- The Partnership recommended transitional support for rural and Māori communities affected by the introduction of an agricultural pricing system.
- The Commission also recommended some type of support for affected rural and Māori communities but was unable to provide specific proposals for support because its report was written before the Partnership’s proposal was complete.
- The Government seeks your feedback on how transitional support mechanisms should be designed, in particular, to ensure they do not undermine the intended price signal of agricultural emissions pricing.

Aotearoa New Zealand has set out an ambitious pathway for reducing its emissions, and this will affect the economy and communities. Pricing emissions – both through the NZ ETS and proposed alternative mechanism for agriculture – are designed to influence people’s choices and business activities, including investment decisions.

Agricultural emissions pricing will affect some rural and Māori communities as businesses respond to the increased cost from emissions pricing. The Government has heard from the public that immediate action on climate change is critical. The Government has also signalled a need to ensure the necessary transition to a low-emissions economy is fair, equitable and inclusive.

Transitional support could include financial support where the Government is concerned about the loss of production in particular sectors or is seeking to support development of new opportunities. Support could also be directed at specific people and communities. This could draw on lessons from the Just Transition model,<sup>14</sup> which is already used in regions such as Taranaki and Southland in response to changes in local employment opportunities.

Further work is needed to identify those rural and Māori communities most affected by the proposed pricing system. Any support provided should not undermine the intended price signal of agricultural emissions pricing. In addition, it is worth noting that a split-gas, farm-level levy with a relatively low price provides a high degree of assistance to affected parties.

<sup>14</sup> Ministry of Business, Innovation and Employment | Hīkina Whakatukituki. 15 November 2021. *Just Transition*. Retrieved from <https://www.mbie.govt.nz/business-and-employment/economic-development/just-transition/> (accessed 1 September 2022).

## Could the emissions price be waived or refunded?

Discretionary relief is being considered in the case of adverse events. This would be similar to the operation of the Inland Revenue tax relief system and would include consideration of:

- waiving of late filing or payment penalties
- payment instalments.

## Revenue recycling

- The Partnership recommended revenue recycling – that revenue raised from the levy would be used to drive further emissions reductions, and to support farmers and growers to reduce their emissions.
- The Government proposes to adopt this recommendation.

The Government agrees with the principles outlined by the Partnership, namely that the revenue recycling decisions must be:

- justifiable and effective
- transparent and accountable
- equitable
- integrated and adding value to existing funding
- enabling and user friendly
- credible.

## Revenue recycling strategy

- The Partnership recommended revenue recycling funds be used for:
  - an incentive payment for farmers and growers who adopt particular mitigations to reduce emissions
  - a separate fund for whenua Māori and iwi to support aspirations for land-use transition
  - contributions to funding research and development
  - rewards for sequestration from on-farm vegetation (if recognised in the system).
- The Partnership recommended that the sector and Māori would have a role in advising on funding priorities.
- The Partnership recommended establishment of a dedicated fund for Māori land owners.
- The Government's proposal is broadly in line with these recommendations. The Government proposes:
  - that levy revenue is used to fund system administration where it is appropriate, the incentive and sequestration payments, and the remaining funds used subject to a revenue recycling strategy

- that an advisory body (or bodies) is in place to advise the Ministers on the revenue recycling strategy. A new advisory body could be established or an existing body (for example, within the Centre for Climate Action on Agricultural Emissions) could fulfil this function
- the establishment of a dedicated fund for Māori land owners.
- The Government seeks your feedback on how the distribution to Māori and across the wider agriculture sector could be determined.

The Government proposes an advisory body (or bodies) is set up to advise the Ministers on the revenue recycling strategy.

This revenue recycling strategy would provide guidance for how best to achieve the Government’s objectives for emissions reductions by setting out the priorities for use of recycled revenue.

The Partnership also recommended a dedicated fund be established to support opportunities and meet the needs of Māori land owners and that this fund be administered by Māori, for Māori. The Government supports this proposal. The Partnership proposed that this fund reflect the levies paid by Māori land owners. The Government proposes to do this by setting a minimum percentage of overall revenue that must go into the dedicated fund.

Your feedback is sought on how the distribution to Māori and across the wider agriculture sector could be determined.

### Question 6

Do you support the proposed approach to revenue recycling? Why, and what improvements should be considered?

## How much money will be raised?

The amount of revenue raised will depend on levy rates and the volume of total emissions reported each year.

How revenue changes over time is also highly dependent on several factors, including:

- the trajectory of the New Zealand carbon price (for long-lived gases)
- the trajectory of agriculture sector emissions reductions in relation to targets and the influence on short-lived gas levy price (for biogenic methane)
- the volume of total agricultural emissions for long-lived and short-lived gases.
- the discount and phase-out rates for both long-lived and short-lived gases.

## Incentivising on-farm emissions reductions

- The Partnership recommended incentive payments to reward mitigation actions and to act as a proxy for a high marginal price incentive.

- The Commission recommended adopting a high price model coupled with structured assistance to create a high marginal price incentive.
- The Government proposes to adopt the Partnership's recommendation.

In the CCRA, Aotearoa New Zealand has adopted separate targets for gross biogenic methane and net long-lived gases. To efficiently achieve these separate targets with a pricing mechanism, two different prices for biogenic methane and long-lived gases are necessary.

Modelling suggests that, to achieve the gross biogenic methane target, the price required is low compared with that needed to reduce net long-lived gases to the target. The Partnership's recommended price of 11 cents per kilogram of biogenic methane is sufficient to meet the targets. This price is equivalent to \$3.93 per tonne of carbon dioxide equivalent (CO<sub>2</sub>-e), much lower than prices prevailing in the NZ ETS (currently roughly \$85 per tonne CO<sub>2</sub>-e). This is because, in the Ministries' modelling, even relatively low biogenic methane prices have a significant impact on pastoral land use, with the modelled result of some sheep and beef land being converted to forestry and scrub.

Though a low price can drive emissions reductions, these largely come from reduced production and land-use change, without an incentive to uptake mitigation practices or technologies on farms. The Partnership proposed to use incentive payments to encourage and reward farmers and growers for the adoption of emissions-mitigation practices and technologies. Incentive payments will work by attaching a value to approved mitigations, allowing farmers and growers to offset their emissions liabilities and receive a deduction for their eligible on-farm mitigation actions.

This approach aligns with the emissions reduction plan for agriculture, which focuses on supporting producers to make changes and accelerating new mitigation technology. The Government is not planning to achieve emissions reductions through widespread, rapid land-use change as a result of the introduction of farm-level pricing. However, the potential is always there for land-use change to occur, and flexible land use has always been, and will continue to be, an important part of Aotearoa New Zealand's primary sector.

An alternative approach is to adopt the Commission's recommendations and create a high marginal incentive to reduce emissions by adopting a high price model coupled with assistance.

- The Commission advised that structured assistance (ie, free allocation) could be offered to soften the effect of a high price, if a high price were necessary to achieve reductions. Structured assistance is complex to implement, requiring more detailed and costly reporting from farmers and growers to calculate the assistance.
- Challenges are also involved related to distributional impacts across the agricultural sub-sectors, which the Government does not believe can be resolved before the pricing system is implemented. All forms of structured assistance explored by the Commission, the Partnership and the Government favour certain groups of participants or certain farm management approaches (ie, intensive versus extensive farming) over others, likely resulting in significant equity impacts.
- Therefore, since a high price, at a level similar to the NZ ETS price, is not necessary to achieve the biogenic methane target, and because structured assistance comes with significant challenges, the Government believes incentive payments are the best approach to encouraging the uptake of mitigation practices and technologies.

## **Farm-level levy coupled with an incentive payment**

Determining the rate of incentive payments for mitigation actions will be essential in ensuring an effective, fair and financially sustainable system. In the economic modelling of the mitigation technologies assumed to be available in 2030, a reward rate of \$50 per tonne of emissions reduced (in carbon dioxide equivalent) made the uptake of some mitigations and technologies cost effective for farmers and growers.

Because the rate of incentive payments is effectively part of the overall levy rate and will be in regulations, any proposed changes that affect these will go out for public consultation and may be amended because of submissions received. Cabinet will ultimately agree to any regulatory changes. The rate of incentive payments will need to change over time as new mitigations and technologies become available, or if the cost of existing options changes.

The most cost-effective mitigation technologies and practices are likely only to be relevant for a portion of farms paying the levy. To reduce overall agriculture sector emissions in the most cost-effective way and keep the cost of the levy to a minimum, the incentive payments could potentially end up going to the subset of farms where mitigation technologies are most cost-effective.

A way to address this could be to vary the rate of reward for different technologies based on the associated emissions reduction and the cost of uptake. This approach is consistent with the Partnership's recommendation and would mean the mitigations would be available to a wider range of farmers and growers. However, varying the rate of reward is less cost effective than applying a flat rate across mitigation practices and technologies.

The Government expects that the mitigations initially rewarded in the pricing system will be relatively simple to recognise from a data and reporting perspective, because farmers and growers would only be required to provide proof of adoption (for possible options, see [table 3](#)), rather than complex farm data. More information on data requirements for receiving an incentive payment is given in the section [Reporting of emissions and payment of an emissions price](#).

**Table 3: Types of mitigation technologies that could be incentivised**

Mitigation	Data	Evidence
<b>Low-emissions animal genetics</b>	<ul style="list-style-type: none"> <li>• Number of breeding stock</li> </ul>	<ul style="list-style-type: none"> <li>• Sire purchase receipts</li> </ul>
<b>Effluent pond treatments</b>	<ul style="list-style-type: none"> <li>• Number of stock</li> <li>• Type of system</li> </ul>	<ul style="list-style-type: none"> <li>• Installation or product purchase receipts</li> </ul>
<b>Low-protein or low-methane forages</b>	<ul style="list-style-type: none"> <li>• Number of stock</li> <li>• Percentage cover or area and yield of forage</li> </ul>	<ul style="list-style-type: none"> <li>• Seed purchase and planting receipts</li> </ul>
<b>Feed additives</b>	<ul style="list-style-type: none"> <li>• Number of livestock</li> <li>• Feed additive type and frequency of feeding</li> </ul>	<ul style="list-style-type: none"> <li>• Feed additive receipts</li> </ul>
<b>Nitrogen inhibitors</b>	<ul style="list-style-type: none"> <li>• Amount and type of fertiliser or inhibitor</li> </ul>	<ul style="list-style-type: none"> <li>• Fertiliser or inhibitor purchase receipts</li> </ul>

Beyond these mitigation technologies, incentive payments could be provided for farm-system changes (eg, reductions in livestock emissions intensity or more cropping) or to address barriers or support certain types of land-use changes that result in emissions reductions (eg, horticulture or growing oats for the milk alternatives market). These reductions would need to be calculated with respect to some kind of baseline. A farm’s historic emissions, a sectoral average or land class average are examples of baseline methods that could be used to incentivise farm-system changes and land-use changes. The Partnership considered this approach but did not recommend it, due to concerns regarding the selection of a baseline method: each method inherently advantages a subset of farmers and growers.

Challenges would also be involved in establishing whether these farm-system and land-use changes were the result of the incentive payment or would have occurred regardless of the incentive payment (eg, due to catchment freshwater quality limits or strong market returns). Incentives would need to fund additional reductions. However, financial incentives for actions such as reducing stock numbers or changing land use will still exist through resulting reductions in a farmer’s or grower’s emissions levy payment. Any incentive payments would need support additional land use change that delivers additional emissions reductions.

For details on how new mitigations and incentives could be included in the system over time see [Method updates, new mitigations and incentives](#).

### Question 7

Do you support the proposed approach for incentive payments to encourage additional emissions reductions? Why, and what improvements should be considered?

## Governance and decision making

A crucial component of the pricing system is who will provide advice and make decisions about different functions.

As part of the farm-level levy, decisions will need to be made on the levy price and what mitigations receive incentives.

As part of the farm-level levy, decisions will need to be made on how recycled revenue is used as well as other ongoing regulatory and operational functions in the system. In some cases, decision-makers may need to seek expert technical and scientific advice.

Important considerations for the Government include ensuring that:



- decision-makers have appropriate accountability
- decision-makers receive advice informed by those affected (including Māori and agriculture sector interests)
- advisory groups have the right skills and expertise
- independence and transparency are incorporated into all processes
- governance and advisory structures have the flexibility to adapt over time.

- The Partnership recommended a collaborative governance approach to overseeing and managing the agricultural emissions-pricing system, involving:
  - the Ministers
  - a system oversight board with sector representatives
  - an independent Māori board
  - an implementation agency
  - a science and implementation panel.
- The Government proposes a more streamlined governance model, as set out in table 4.

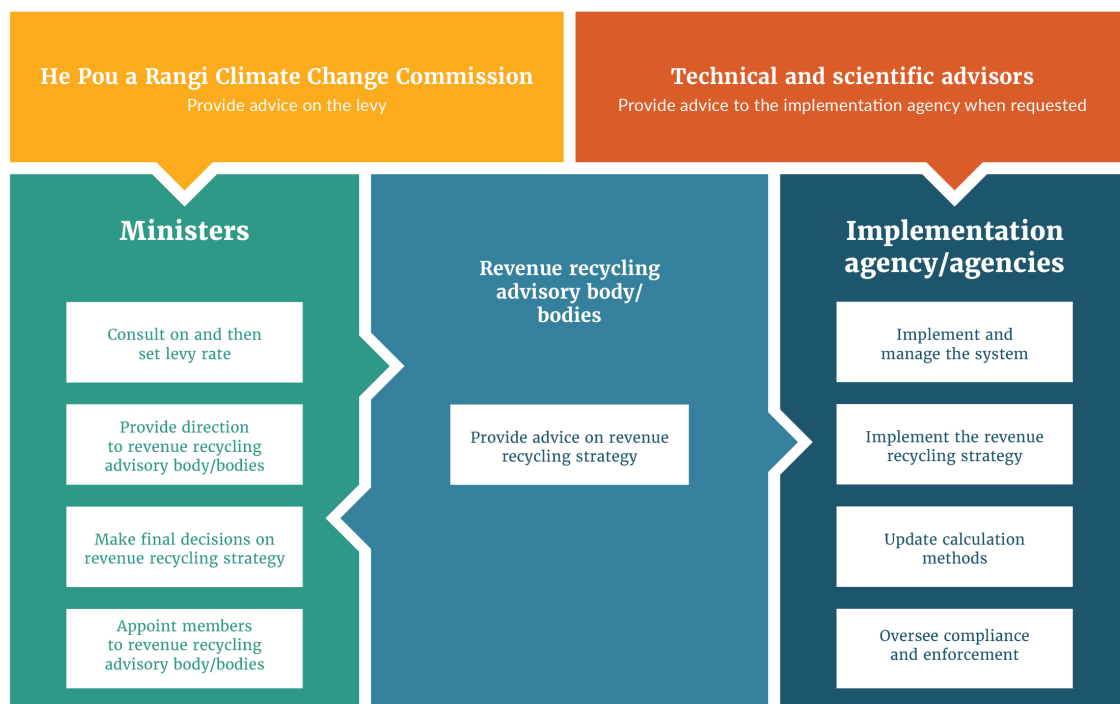
Under the Partnership’s recommended farm-level levy, the system oversight board would have responsibility for:

- directing use of revenue from the pricing system
- governing the implementation agency
- advising the Ministers on levy rates and rates of reward for sequestration and incentive payments and discounts
- seeking advice from a science and implementation panel on updates to the emissions calculation method and inclusion of new mitigations or sequestration opportunities.

With the modifications the Government proposes to the farm-level levy, the pricing system has fewer functions that require advisory or governance bodies than identified by the Partnership. The Government proposes a more streamlined approach that matches the requirements of the Partnership: a system that avoids unnecessary bureaucracy, duplication and administration costs, and is as simple as possible, to support essential roles and responsibilities.

Figure 3 provides an overview of the proposed governance and decision-making model. A description of the functions and roles and responsibilities is summarised in table 4.

**Figure 3: Proposed governance structure**



**Table 4: Proposed governance and decision-making model**

Pricing system functions	Who?	Roles and responsibilities
<b>Setting levy rates</b>	Ministers	<ul style="list-style-type: none"> <li>Set final levy rates via Order in Council.</li> <li>Seek advice from the Climate Change Commission on setting levy rates.</li> <li>Consult with iwi, Māori and the agriculture sector.</li> </ul>
	Climate Change Commission	<ul style="list-style-type: none"> <li>Provides advice to the Ministers on setting levy rates.</li> </ul>
<b>Regulatory and operational functions</b>	Implementation agency (or agencies)	<ul style="list-style-type: none"> <li>Implement the pricing system, including day-to-day management of registration, reporting, payment verification and auditing.</li> <li>Implement the process for updating the centralised calculator methods, and inclusion of new mitigations and approved actions for incentives. This would include seeking external technical and scientific expertise as needed.</li> <li>Implement strategy for use of system revenue.</li> <li>Maintain compliance and enforcement.</li> <li>Facilitate revenue recycling advisory group(s).</li> <li>Provide ongoing advice to the Ministers and evaluation of pricing system.</li> </ul>
<b>Technical and scientific expertise</b>	Implementation agency (or agencies)	<ul style="list-style-type: none"> <li>Implementation agency to convene external technical and scientific expertise when needed to support its work.</li> </ul>
<b>Revenue recycling</b>	Ministers	<ul style="list-style-type: none"> <li>Provide direction to the revenue recycling advisory body and endorse the final revenue recycling strategy.</li> </ul>

Pricing system functions	Who?	Roles and responsibilities
		<ul style="list-style-type: none"> <li>• Appoint representatives to advisory body (or bodies).</li> <li>• Maintain oversight and accountability for use of levy revenue.</li> </ul>
	Revenue recycling advisory group and/or independent Māori advisory group	<ul style="list-style-type: none"> <li>• Advise on the strategy for the use of system revenue.</li> <li>• Advise on the strategy for use of funds ringfenced to support Māori land owners and agribusinesses.</li> </ul>

This model adapts the Partnership recommendations in the following ways:

- **Science and implementation panel** – rather than establishing a permanent panel, it is proposed that scientific and technical expertise is commissioned for different pieces of technical advice, as needed by the implementation agency.
- **Price setting** – the proposed changes to the price-setting approach provide greater transparency, independence and accountability than having representatives from the agriculture sector determine the levy rates to be paid by the sector.
- **Implementation agency** – will have regulatory functions where the governance responsibility sits with the Ministers, which provides more appropriate accountability for a regulatory system.
- **Advisory group membership** – appointed by the Ministers (if a new advisory body is created) rather than jointly between the Ministers and He Waka Eke Noa partners, as proposed by the Partnership.

In line with the Partnership recommendations, the Government proposes a role for the sector and iwi and Māori relating to advising on the strategy for revenue recycling, including specific funding to support Māori land owners and agribusiness.

There may be existing or proposed bodies (for example, within the new Centre for Climate Action on Agricultural Emissions) that would be appropriate to take this on as an additional responsibility. Alternatively, a new advisory group (or groups) would need to be established following existing government processes and procedures.

Terms of reference will need to be drafted, which typically cover:

- the role and purpose of the group
- its membership (and how this could change over time)
- any appointment process, including fees and term of appointment
- its reporting arrangements.

The advisory group (or groups) would be facilitated by the relevant agency to provide advice to the Ministers on the use of revenue. Because it is Crown revenue, Ministers will need to maintain oversight and accountability for use of levy revenue.

## Māori-specific governance

- The Partnership recommended that an independent Māori board be established to manage a dedicated fund to:

- ensure Māori land owner interests are appropriately reflected in the strategy for use of system revenue
  - direct the investment of funds paid by Māori agribusinesses towards priority areas that best support Māori land owners’ transition to planning and management frameworks that integrate a whole-of-whenua approach to managing on-farm emissions.
- The Government proposal is aligned with the Partnership’s recommendations.

As discussed in the section [Governance and decision making](#), the Government’s proposal features a clear role for iwi and Māori in advising on the use of revenue from the pricing system. The Government supports ringfenced funding for Māori from the system revenue and agrees this could be governed by a Māori-led group that interacts with the revenue recycling advisory body, as proposed by the Partnership.

Establishing an independent Māori-led advisory group would give Māori greater leadership over funding dedicated to Māori farmers, growers and land owners.

## 3.5 Recognition of sequestration from on-farm vegetation

- The Partnership recommended that farmers and growers should be recognised for their on-farm sequestration as a core component of any agricultural emissions-pricing system.
- The Commission recommended that the Government should reward additional non-NZ ETS sequestration in a separate system, which could recognise and reward a wide range of benefits, such as biodiversity and water quality.
- The Government is consulting on a pathway to recognise sequestration. For example:
  - from 2025, employing a simple system that uses contractual payments to reward sequestration from riparian margins and additional sequestration from active management of indigenous vegetation
  - working towards incorporating new categories of vegetation in the NZ ETS in the longer term.

### How vegetation stores carbon dioxide

As vegetation grows, it absorbs and stores carbon, which reduces Aotearoa New Zealand’s net emissions. The Government is committing that, alongside an agricultural emissions-pricing system, the opportunity exists for farmers and growers to be recognised for sequestration occurring in vegetation from 2025.

Vegetation can sequester and emit carbon or hold carbon in a ‘steady state’ once the vegetation is fully grown. This means any carbon sequestration in vegetation should only receive recognition if it is growing and then permanently exists thereafter. Harvesting, pruning or clearing the vegetation will decrease the carbon stored (eg, clearing regenerating bush to revert to pasture or cutting down a shelterbelt).

This vegetation can also provide a range of additional environmental benefits such as providing habitat for biodiversity, contributing to improved freshwater quality and erosion control.

As a rule, the taller the vegetation and denser per hectare something is planted, the more carbon will be stored in that area. Faster-growing species will sequester more carbon more quickly.

This means carbon look-up tables used in the NZ ETS differ according to the type of vegetation, to reflect differing rates of carbon sequestration. For example, an exotic hardwood woodlot sequesters about 21 t CO<sub>2</sub> ha<sup>-1</sup> yr<sup>-1</sup> (per hectare per year) on average,<sup>15</sup> while riparian vegetation can sequester about 3.4 t CO<sub>2</sub> ha<sup>-1</sup> yr<sup>-1</sup>.<sup>16</sup>

Actively managing vegetation, such as preventing grazing by stock or pests, also increases carbon sequestration rates. For example, actively managed regenerating kānuka sequesters, on average, about 4.6 t CO<sub>2</sub> ha<sup>-1</sup> yr<sup>-1</sup>.<sup>17</sup> While the amount of carbon sequestration that occurs due to active management is not certain, Government analysis assumed it was about 0.5 t CO<sub>2</sub> ha<sup>-1</sup> yr<sup>-1</sup>.

## What is the current policy context?

Some vegetation on farms is likely to already be eligible for the NZ ETS. For land not forest on 31 December 1989, or that was deforested between 1990 and 31 December 2007 ('post-1989 forest land'), you can apply to enter the scheme for forests that:

- are at least 1 hectare in size and have (or have the potential to have) tree crown cover:
  - of more than 30 per cent in each hectare from forest species that can reach at least 5 metres in height at maturity
  - with an average width of at least 30 metres<sup>18</sup>
- have aerial imagery from 31 December 1989 or close to this date that shows the land was not forest.

This means some types of vegetation are not currently eligible for schemes operated by the Government. This includes:

- **pre-1990 forest land** – land that was considered forest before 1 January 1990
- **small amounts of vegetation** – if vegetation covers less than 1 hectare, it will not be eligible
- **vegetation that does not have the potential to reach 5 metres** – for example, low-growing species such as tauhinu (cottonwood), or where the vegetation is not being actively managed to regenerate (eg, scattered vegetation without fencing off the area from stock)
- **vegetation that is cut down or pruned frequently** – for example, perennial fruit and nut trees.

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<sup>15</sup> See [Climate Change \(Forestry Sector\) Regulations 2008, sch 6, table 1](#).

<sup>16</sup> Manaaki Whenua Landcare Research (for Ministry for Primary Industries). September 2018. *Carbon sequestration potential of non-ETS land on farms*. Retrieved from [www.mpi.govt.nz/dmsdocument/32134/direct](http://www.mpi.govt.nz/dmsdocument/32134/direct) (accessed 20 September 2022).

<sup>17</sup> See previous footnote.<sup>16</sup>

<sup>18</sup> See the Ministry for Primary Industries website for more information: [www.mpi.govt.nz/forestry/forestry-in-the-emissions-trading-scheme/registering-post-1989-forest-land/](http://www.mpi.govt.nz/forestry/forestry-in-the-emissions-trading-scheme/registering-post-1989-forest-land/).

These types of vegetation have generally been excluded from the NZ ETS to date. This is because they sequester quite low levels of carbon relative to the administrative and compliance costs that the scheme carries for both the land owner and regulator.

Much of this vegetation is also unlikely to contribute towards Aotearoa New Zealand's national and international climate change targets, at present. Sequestration from forests established after 1989 are included both domestically and internationally. Pre-1990 forests are accounted for against business-as-usual reference levels, meaning only sequestration arising from management actions above a business-as-usual baseline can be included.

Aotearoa New Zealand does not currently have accurate estimates of sequestration above business-as-usual levels and accounts for zero emissions and sequestration from pre-1990 forests. Emissions and sequestration from vegetation that does not meet the definition of a forest are currently excluded from Aotearoa New Zealand's domestic and international targets.

For many farmers and growers (particularly extensive drystock farmers and Māori agribusinesses), it is a priority that more vegetation is recognised. Some farmers and growers have expressed the view that, if they are to pay for livestock emissions, they should also be recognised for genuine carbon removals currently not captured that occur on their land.

Other farmers and growers have also expressed concerns about the complexity of the NZ ETS, and the fees and costs associated with participating in it. This includes concerns with the practical challenges of participating in the scheme, such as penalties when making errors on emissions returns and a lack of clear information on whether land or vegetation is eligible.

## What did the Partnership recommend?

- The Partnership recommended that farmers and growers should be recognised for their on-farm sequestration as a core component of any agricultural emissions-pricing system.

The Partnership recommended a two-phased approach to recognising sequestration.

- **From 2025** – vegetation that is a part of existing policies and programmes (QEII covenants, Ngā Whenua Rāhui, Māori reservation land and regional council-funded vegetation) would be recognised.
- **From 2027** – vegetation would be fully integrated into the emissions calculator and levy and initially rewarded at 75 per cent to 90 per cent of the NZU. A wide scope of vegetation was recommended to be recognised under two categories:
  - **permanent vegetation** that would not typically be cleared, including indigenous vegetation and riparian plantings
  - **cyclical vegetation** that is planted and may be felled and re-established, including perennial cropland, scattered forest, shelter belts and small woodlots.

The Partnership recommended the NZ ETS be improved and updated, to allow more vegetation categories to be included, and the registration and reporting processes should be simplified. The Partnership also recommended prioritising research on improving estimates for the carbon sequestration potential in eligible and potential future categories (eg, farm practices to improve soil carbon).

## What did the Commission recommend?

- The Commission advised against bringing on-farm vegetation into a farm-level pricing system.

The Commission's concerns about the Partnership's proposal included that it:

- increases the complexity of the pricing system and would create implementation challenges for farmers, growers, government and the wider sector
- creates inconsistencies with the split-gas target and has the potential to weaken efforts to reach emissions targets, because farmers and growers would be able to offset their emissions bill with sequestration that may not contribute to targets
- is not designed in a way that would guarantee additionality (see [appendix five](#))
- creates inequities for land owners not included in the agricultural emissions-pricing system.

The Commission was supportive of tools being developed to incentivise additional carbon sequestration from on-farm vegetation either within or outside of the NZ ETS.

## What are the options the Government is considering?

Certain types of vegetation have the potential to provide real and additional carbon (see [appendix five](#)) and other benefits for Aotearoa New Zealand and the land owners who are not well served by the current forest categories within the NZ ETS. For example, in 2018, pre-1990 natural forests were estimated to have removed 1,796 kilotonnes of CO<sub>2</sub>-e per year.<sup>19</sup> This sequestration is not eligible to be recognised in the NZ ETS.

Recognition of sequestration not currently rewarded is an important component of an agriculture emissions pricing system for farmers, growers, whenua Māori and Māori agribusinesses.

The Government has considered the recommendations from the Partnership and Commission, and agrees the NZ ETS is the most appropriate mechanism to reward all forms of eligible sequestration from vegetation in the long term. Having one system that recognises sequestration in Aotearoa New Zealand is a more coherent, efficient and equitable approach.

However, the changes that would be required to the NZ ETS, to incorporate additional vegetation categories, will not be ready for 2025. This is due to data availability constraints and the complexity of changing legislation and regulations.

Therefore, the Government proposes a pathway forward to recognise sequestration, with a short-term solution that could recognise additional vegetation on farms in 2025 and that transitions, in time, to the NZ ETS.

For more information on vegetation categories proposed by the Partnership that the Government is not considering see [appendix 6](#).

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<sup>19</sup> Ministry for the Environment. 1 March 2021. *Net emissions and removals from vegetation and soils on sheep and beef farmland*. Retrieved from <https://environment.govt.nz/publications/net-emissions-and-removals-from-vegetation-and-soils-on-sheep-and-beef-farmland/> (accessed 20 September 2022).

## **NZ ETS as a long-term solution for recognising sequestration**

In the long term, the Government considers that using the NZ ETS to recognise on-farm sequestration directly addresses some of the Commission's concerns related to fairness, credibility and progress towards targets.

Rewarding additional categories of sequestration only within the NZ ETS prevents the agricultural emissions levy funds from being spent on sequestration, instead of funding activities to reduce gross biogenic methane and nitrous oxide emissions.

Recognition for on-farm sequestration would instead be funded by fossil fuel-emitting sectors participating in the NZ ETS, via the purchase of NZUs. Farmers and growers would receive the full NZU price as a reward for qualifying sequestration, rather than the discounted rate proposed by the Partnership.

All eligible land owners could earn NZUs that could be sold to NZ ETS participants. This is a direct benefit, because a wide range of land would be eligible to apply, meaning land owners who are not participating in the levy are able to participate for their vegetation (for example, lifestyle-block owners and owners of commercial and industrial facilities).

This aligns with the Commission's concerns that pricing of vegetation through the levy could create issues of fairness relative to other land owners. To ensure the credibility of the NZ ETS and its role in supporting Aotearoa New Zealand to meet its domestic and international emissions targets, introducing new categories requires a high degree of rigour.

Estimates of carbon stock changes that come from managing indigenous vegetation are not as developed or accurate as the methods for accounting for carbon stock changes in exotic forests. The Government has invested in research to help fill this gap, through the Budget 2022 Climate Emergency Response Fund.

An important aim of the research programme is to link management activities to carbon stock changes and improve how that can be measured. The outcomes from this research will be relevant for any system that rewards carbon stock changes in indigenous vegetation. This research is part of a four-year programme that is starting this year. Due to the slow growth and complexities of indigenous vegetation, results will be at least four years away.

### *Proposal for new methods to include further categories in the NZ ETS*

As an alternative to the current government approach to include new categories in the NZ ETS, a new innovative approach could be considered where those willing to invest, or co-invest with government, propose new categories for inclusion.

Under this approach, the burden of proof for including new categories of sequestration in the NZ ETS and Aotearoa New Zealand's international greenhouse gas reporting and accounting could lie with those who undertake and pay for the necessary science and measurement. There would also be government direction, oversight and independent third-party verification of the science.

Aotearoa New Zealand's international greenhouse gas reporting and accounting is subject to annual review and will be assessed against good practice guidelines around transparency,



completeness, consistency, comparability and accuracy.<sup>20</sup> This innovative new approach would also be assessed against these criteria. To achieve completeness in particular, estimates of emissions and sequestration from a category will need to cover all of Aotearoa New Zealand, from farmland to the conservation estate, from those participating in the new NZ ETS category to those who are not.

### *Challenges to overcome to introduce additional categories in the NZ ETS*

The NZ ETS currently penalises deforestation that occurs on exotic pre-1990 forest land. Clearance or degradation of vegetation in any additional categories could similarly be penalised for the removal of carbon stock that is considered to be a part of the baseline. This could come at a cost to land owners and the Government.

Participants under the NZ ETS face costs of compliance and administration. These can include registration fees, expenses from seeking brokerage services to help with selling NZUs, and further cost-recovery rates that may be applied by the regulator for processing of emissions returns.

Costs for participants associated with cost recovery by the regulator need to be considered, particularly for small areas of vegetation or vegetation with low sequestration rates. This has been raised as an issue by the Partnership and will affect the overall attractiveness of the system for participants.

## **Recognising sequestration in 2025**

The Partnership recommended a simplified sequestration scheme as an interim option that rewards sequestration in existing programmes, such as QEII covenants, Ngā Whenua Rāhui, Māori reservation land (qualifying vegetation) and relevant regional council-funded indigenous vegetation on farmland. These programmes were set up with specific purposes not necessarily aligned with achieving carbon sequestration.

The Government sees issues with this, because farmers with eligible vegetation that is not part of these programmes may not be eligible to be rewarded. These programmes also recognise areas of cultural or ecological importance, so an additional step would still be required to verify that the land in the programme aligns with achieving carbon sequestration. However, the Government will investigate the extent to which existing programmes could potentially support recognition of sequestration in 2025.

## **Contractual payments for sequestration**

The Government proposes a simple system that could be used to recognise some on-farm vegetation by 2025 through contractual payments. A portion of levy money would be set aside for payments for sequestration. Farmers and growers could apply to get recognition for eligible sequestration to help reduce their emissions bills.

Participants would have to go through an application process including reporting their eligible vegetation. Successful applicants would enter into a contract with the implementation agency for a set number of years. In this time, successful applicants would be required to maintain

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<sup>20</sup> See the *Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories*. Retrieved from <https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html> (29 September 2022).

their vegetation. After the contract ends, there would be no ongoing liability requiring the vegetation to be maintained as it was for the duration of the contract.

This payment could potentially be designed to align or cross over with biodiversity incentives that are being developed in relation to the *National Policy Statement for Indigenous Biodiversity: Exposure draft*<sup>21</sup> and *Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy*.<sup>22</sup>

## Types of vegetation to be recognised in 2025

Trade-offs and risks are involved with recognising further types of vegetation than those already recognised through the NZ ETS.

The Government's preferred option for expanded recognition of vegetation in the short term is for two categories, partly aligned with those considered by the Partnership, that:

- lead to real and verifiable changes, seeing permanent stores of carbon
- can be related to discrete management interventions taken by the land owner that have increased carbon
- may be achieved through implementation approaches that are able to manage the administrative costs and complexity.

The categories to be recognised in 2025 include:

- **management of indigenous vegetation**
  - this category would see land owners provided with recognition for increases in carbon in indigenous vegetation linked to specific management interventions
  - the category would apply to land that is wholly or predominantly in indigenous woody vegetation, either planted, regenerated or a combination. Stock must be excluded from the area. Stock exclusion can include fencing, geographic boundaries and/or dense vegetation that stock cannot access
- **riparian margins**
  - vegetation in riparian margins planted after 2008 alongside a waterway of a minimum size that includes a predominant mix of woody vegetation would be given a set rate of credits or units for a specified period
  - generic requirements are likely for management practices for this category that contribute to increased carbon storage, such as a requirement to have fenced the riparian margin.

If the vegetation were removed during the contract, liabilities would need to be charged to the farmer or grower, to account for the resulting decrease in carbon. However, removal is expected to be minimal for this vegetation.

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<sup>21</sup> New Zealand Government | Te Kāwanatanga o Aotearoa. 2022. *National Policy Statement for Indigenous Biodiversity: Exposure draft*. Retrieved from <https://environment.govt.nz/publications/national-policy-statement-for-indigenous-biodiversity-exposure-draft/> (accessed 21 September 2022).

<sup>22</sup> Department of Conservation | Te Papa Atawhai. 2020. *Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy*. Retrieved from <https://www.doc.govt.nz/nature/biodiversity/aotearoa-new-zealand-biodiversity-strategy/te-mana-o-te-taiao-summary/> (accessed 20 September 2022).

Officials consider that ongoing action to continue to exclude stock or carry out pest control could meet the additionality threshold. This method reduces the administrative burden, because there is no requirement to prove the year of establishment or stock exclusion.

### **Riparian vegetation**

A baseline year of 2008 is proposed for riparian strips, because 2008 aligns with recommendations made by the Partnership due to better satellite imagery being available.

## **Challenges that need to be worked through**

Although it is a priority that additional sequestration is recognised in 2025 and additional categories are recognised in the NZ ETS in the long term, challenges need to be worked through for sequestration to be rewarded in 2025. For sequestration to be recognised in 2025, these issues and challenges will need to be adequately addressed.

For example, the NZ ETS requires a minimum area threshold of 1 hectare for vegetation to be entered. A 1 hectare threshold may exclude a lot of riparian vegetation on farms. However, including small areas of vegetation can become expensive to administer.

Another challenge is equity of sequestration recognition being exclusive to levy payers. Because these vegetation types are being paid by the levy in 2025, it would be available to levy participants only. Non-levy payers who own similar forests, for example, Māori owners of indigenous vegetation, would not have access to any recognition, so broader equity issues need considering.

### **How would carbon sequestration rates be set?**

Another challenge to be worked through is carbon sequestration rates. Determining the rates of carbon sequestration for any given area of managed indigenous vegetation or riparian strip requires a significant amount of data.

For example, the NZ ETS currently develops site-specific values through the Field Measurement Approach applied to forests greater than 100 hectares, which requires land owners to take several physical measurements of the forest (eg, measuring the diameter of trees at breast height) and to provide a range of forest and silvicultural information.

To ensure the vegetation categories included can be administered in a cost-effective manner for the participant and regulator, a standardised 'average' rate of carbon sequestration on initial introduction may be used.

These standardised rates would not vary, year on year, with the age of vegetation, dominant species in the vegetation, or region the vegetation is located within, as is currently required in the NZ ETS.

For the 2025 proposal to recognise sequestration using contracts, separate standard rates of carbon sequestration could be set for management of indigenous vegetation and riparian strips.

The Government will consider the rate at which carbon sequestration is incentivised. This could be, for example, 75 per cent of the price of the NZU.

### Question 8

Do you support the proposed approach for recognising carbon sequestration from riparian plantings and management of indigenous vegetation, both in the short and long term? Why, and what improvements should be considered?

## 3.6 Options for pricing synthetic nitrogen fertiliser emissions

- The Partnership recommended pricing agricultural emissions at farm level, because farmers and growers will have a better understanding of their emissions profile and the changes they can make to synthetic nitrogen fertiliser use to reduce emissions.
- The Commission recommended pricing synthetic nitrogen fertiliser emissions within the NZ ETS alongside other sources of long-lived gases, on the basis it is more economically efficient to do so.
- The Government is consulting on both proposals for pricing synthetic nitrogen fertiliser emissions:
  - synthetic fertiliser emissions are priced within the farm-level levy
  - synthetic fertiliser emissions are priced within the NZ ETS at manufacturer and importer level.

Synthetic nitrogen fertiliser emissions currently make up 6 per cent of agricultural emissions and have indirect impacts on overall agricultural emissions because they affect pasture growth. Reducing and optimising the use of synthetic nitrogen fertiliser can help reduce both biogenic methane emissions and nitrous oxide emissions from dung and urine deposited on pastures, the other 90 per cent of agricultural emissions. All synthetic nitrogen fertilisers contribute to nitrous oxide emissions and urea also contributes to carbon dioxide emissions.

Synthetic nitrogenous fertiliser is just one nitrogen input into farm systems. Other important sources include:

- organic nitrogen fertiliser (eg, chicken manure)
- atmospheric deposition of nitrogen
- nitrogen fixation from legumes (eg, clover)
- the nitrogen–protein content of brought-in feed.

These nitrogen inputs are cycled through pasture and soils, and by animals onto soils through urine and dung. Nitrous oxide emissions are a result of all these nitrogen inputs not just synthetic nitrogen fertiliser.

Organic nitrogen fertilisers are also a source of agricultural emissions. In Aotearoa New Zealand, these are solely from animal manure that is spread on pasture after collection in manure-management systems. As such, it would not be practical to price these emissions through the NZ ETS at processor level. It is, however, proposed to capture organic fertilisers through the farm emissions calculator as a data input for the farm-level levy.

The Government is consulting on two proposals for pricing synthetic nitrogen fertiliser emissions.

1. Synthetic fertiliser emissions are priced within the farm-level levy.
2. Synthetic fertiliser emissions are priced within the NZ ETS at manufacturer and importer level.

## **Option 1: Synthetic nitrogen fertiliser emissions are priced within the farm-level levy**

Under this option proposed by the Partnership, farmers and growers would report and pay for synthetic nitrogen fertiliser emissions with the rest of their on-farm emissions, including organic nitrogen fertilisers.

If synthetic nitrogen fertiliser is priced within the farm-level levy, farmers can consider all nitrous oxide emissions together, including organic nitrogen fertiliser (see the section [Reporting of emissions and payment of an emissions price](#)), rather than just nitrous oxide emissions from non-synthetic nitrogen fertiliser sources.

The Partnership also preferred farm-level pricing of fertiliser emissions because farmers and growers could be recognised for new mitigation technologies or farm-level practices that reduced emissions from synthetic nitrogen fertiliser.

Significant ongoing research is being conducted in Aotearoa New Zealand, and internationally, into nitrous oxide emissions from the application of nitrogenous fertiliser. The Sustainable Food and Fibres Futures N-Vision NZ programme by Ravensdown,<sup>23</sup> and introduction of urease inhibitors to New Zealand's Greenhouse Gas Inventory, are recent examples.

It is likely, within the next decade, this work will yield results that allow the recognition of different rates of nitrous oxide emissions from different farm characteristics (eg, slope class in hill country, as is currently recognised for nitrous oxide from urine and dung) or different management practices (eg, precision agriculture techniques). If this occurs, the pricing of synthetic nitrogen fertiliser emissions at the processor level would need to be revisited.

Under this option, revenue raised from levying synthetic nitrogen fertiliser would be recycled in the same way as the other farm levy revenue (see section [Revenue recycling](#)).

## **Option 2: Synthetic fertiliser emissions are priced within the NZ ETS at manufacturer and importer level**

Under this option proposed by the Commission, importers and manufacturers of synthetic nitrogen fertiliser would be brought into the NZ ETS and would need to surrender NZUs for the emissions produced as the fertiliser is both manufactured and used. Manufacturers and importers would likely pass the costs of NZUs on to farmers and growers through increased fertiliser prices. Manufacturers and importers could also work to develop different fertiliser products with lower emissions.

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<sup>23</sup> Talbot W. 9 August 2002. *A vision for N with new N-loss project*. Retrieved from [www.ravensdown.co.nz/expertise/a-vision-for-n-with-new-n-loss-project](http://www.ravensdown.co.nz/expertise/a-vision-for-n-with-new-n-loss-project) (accessed 20 September 2022).

The Commission noted that the Partnership’s farm-level pricing system excluded some users of synthetic fertiliser. For example, it would exclude many horticulture and arable farms that use a significant amount of synthetic nitrogen fertiliser through a threshold of at least 40 tonnes per annum. This option would therefore enable a broader and more equitable coverage of the emissions from synthetic nitrogen fertiliser application and enable whole of economy trade-offs with all other sectors priced under the NZ ETS.

Other benefits of this option include low administration costs for farmers and growers, because fertiliser manufacturers and importers will have the obligation to report and surrender NZUs. This option would also have lower implementation costs for the Government and would be feasible to implement by 1 January 2025. Currently, 12 fertiliser importers or manufacturers are reporting in the NZ ETS.

Pricing synthetic nitrogen fertiliser differently from the other on-farm sources of nitrous oxide emissions (including organic nitrogen fertiliser) may cause substitution between different inputs and pollution swapping (eg, away from synthetic nitrogen fertiliser to manure application or supplementary feed).

Because this system would fall under the NZ ETS, under this option, revenue would be distributed through the Climate Emergency Response Fund alongside other NZ ETS revenue. This is different from revenue recycling under the farm-level levy option (see section [Revenue recycling](#)).

### 3.7 Future enhancements

Enhancements can be made to the pricing system that would further improve its effectiveness, practicality and equity. While it is not possible to build these elements into the system by 2025, it is intended to incorporate them over time. Such future enhancements could include more detailed reporting and recognising a wider range of mitigations.

### 3.8 Interim processor-level levy

The interim processor-level levy is proposed as a transitional step, if the farm-level pricing system cannot be operationalised by 2025. It is unlikely to be in place for longer than two years. Work to implement the farm-level pricing system would continue to be progressed as a priority.

The Government will need to assess the readiness of the system and sectors, for a farm-level pricing system to be implemented in 2025, against achievement of the following milestones:

- establishment of governance arrangements and an implementation agency
- receiving funding for the system
- getting the IT system design and build under way
- farmers and growers being ready to participate in the pricing system (ie, having a written plan to record actions to reduce or offset emissions on their farms).

Given the risks around making sufficient progress against these significant milestones, the Government is also proposing to create the option to implement, via regulations, an interim processor-level, split-gas levy on agricultural emissions.

An interim processor-level levy is preferred to the NZ ETS backstop because it will enable a smoother transition to a farm-level levy and minimise disruption to the wider NZ ETS market. If the Government decided to activate the interim processor-level levy, it would remain in place only until the above milestones are met and the farm-level levy can be implemented.

The primary legislation would need to enable an interim processor-level levy. Regulations would be drafted to update emissions factors for the interim processor-level levy, establish operational details of the system and set levy rates.

Legislation would outline that the interim processor-level levy would be temporary and be in place only as long as needed, to give the Government and the sector more time to prepare to implement the farm-level levy.

## **Who would pay an interim processor-level levy?**

Agricultural processors already report their annual emissions to the Environmental Protection Authority via the New Zealand Emissions Trading Register. This would continue and would be used to inform calculation of levy payments.

Under an interim processor-level levy, processors (ie, meat and milk processors and importers and manufacturers of fertiliser) would be required to pay an emissions levy based on the volume processed or imported. 'Milk and meat processors' would be defined as processors that carry out processing of milk or colostrum (cattle) or the slaughtering of ruminant animals (cattle, sheep and deer).

The proposal is also to exclude processors of horses, goats, pigs, poultry products, wool and velvet from paying for their emissions under the interim processor-level levy. This is because the costs of including these minor sectors in an interim levy would likely outweigh the additional emissions reductions benefits that would arise from pricing these sectors at the processor level. For more information about the pricing of minor sectors at the farm level, see the section [Minor-emitting livestock sectors](#).

The Government is also consulting on whether emissions from synthetic nitrogen fertiliser should be priced through the pricing system alongside other agricultural emissions, or whether they should enter the NZ ETS (see [section 3.6 Options for pricing synthetic nitrogen fertiliser emissions](#)).

If fertiliser emissions are included in the farm-level levy, and the interim processor-level levy were activated, fertiliser importers and manufacturers would be required to report and pay for emissions associated with their activities. If fertiliser emissions are priced through the NZ ETS, fertiliser importers and manufacturers would be excluded from paying the interim processor-level levy, because they would already be paying for those emissions through the NZ ETS.

## **Activating the interim processor-level levy and transitioning to the farm-level levy**

The Government proposes that, by mid to late 2023, the Ministers would recommend to Cabinet whether an interim processor-level levy should come into force in 2025. The Ministers would make this recommendation if the farm-level pricing system is not on track to be implemented by 2025, assessment of which would be informed by progress made against key milestones including both system and farmer readiness.

## Calculating the interim processor-level levy

The interim processor-level levy would be a split-gas levy that establishes separate prices for biogenic methane and long-lived gases. For details on how the prices of biogenic methane and long-lived gases would be initially determined and updated over time, see the section [How would levy prices be set for biogenic methane and long-lived gases?](#)

The levy would be calculated based on current emissions factors and output (ie, kilograms of milk solids, kilograms of beef or sheep meat).

$$\text{Levy} = \text{A} + \text{B}$$

Where:

**A** = biogenic methane **emissions** × price of biogenic methane

**B** = long-lived gas **emissions** × price of long-lived gases

(**emissions** = product amount × emissions factor)

The levy prices will be set out in regulations with an annual review, if needed, for the interim period until the farm-level levy is operational.

Emissions factors are representative values assigned to activities that result in emissions. For agriculture, this means emissions factors are assigned to animals, animal products and fertiliser.

Advice from a technical advisory group will be used to review and update emissions factors for agriculture when developing draft regulations for the interim-processor levy. These regulations will also be publicly consulted on before coming into force.

## Uses for levy revenue

Based on current NZ ETS carbon price forecasts and projected emissions volumes, an interim processor-level levy could raise \$187 million in 2025. This revenue could be recycled to fund:

- the pricing system operating costs
- research and development
- the set-up costs of a farm-level levy pricing system
- incentivising mitigations and technology uptake on farms through existing funding mechanisms.

## Sector impacts

An interim processor-level levy would result in additional costs for agricultural processors. Such costs may include both set-up and wind-down administrative costs to respond to payment of a levy. Farmers and growers are likely to be financially affected by the costs of the levy being passed on by processors, importers and manufacturers of synthetic nitrogen fertilisers (if included in the system).

The interim processor-level levy option could lead to economic loss due to reduced payments for farmers' and growers' products, or, in the case of synthetic nitrogen fertiliser, through increased product prices paid by farmers and growers. Alongside this, farmers and growers would also be preparing to shift to a farm-level levy in future, which could have flow-on effects for consumers.



Because the point of obligation would be with processors, there would be no administrative burden on farmers and growers unless they choose to apply for farm-level incentives. Farm-level incentives would be limited under the interim processor-level levy. Applying for incentives would be optional and not directly related to levy payment obligations, so may not encourage farmers and growers to reduce emissions as much as a farm-level levy would.

However, some positive effects would be gained, in that overall efficiencies achieved across the sector by on-farm actions would lead to a reduction in national emissions factors for agricultural activities.

An interim processor-level levy would also mean more time is available to work with, and support, Māori farmers, growers and land owners to participate in the future farm-level pricing system. However, this interim option may not be preferred by many Māori land owners, because it would not support them to make decisions or recognise their actions on farms as much as a farm-level levy would.

### **Question 9**

Do you support the introduction of an interim processor-level levy in 2025 if the farm-level system is not ready? If not, what alternative would you propose to ensure agricultural emissions pricing starts in 2025?

# Section 4: Impacts

## 4.1 Impacts on agriculture

Economic modelling provides important evidence to estimate the effects the pricing system might have and to inform the Government's decisions.

The modelling shows that the proposed farm-level levy option can lead to emissions reductions consistent with Aotearoa New Zealand's legislated target and the agriculture sector's indicative sub-target of the country's first and second emissions budgets.

The Government commissioned modelling on various options for agricultural emissions pricing, including both farm-level (farm-level levy) and processor-level (processor-level NZ ETS and processor-level levy) options, to estimate possible emissions reductions in 2030<sup>24</sup>. The model compares an emissions pricing system scenario against a scenario with no pricing system, to see what the effect of pricing agricultural emissions is in 2030.

It is important to note that the Government has already committed to pricing agricultural emissions by 2025, with the final pricing approach to be determined. In addition to estimating emissions reductions, the modelling also estimates changes in land-use, agricultural production, and net revenue for the sector as a whole and sub-sectors.

### Modelling results

The modelling uses farm data from different farms to generate estimates of biogenic methane and nitrous oxide emissions and carbon sequestration. Farm-systems modelling has been completed on these farms looking at opportunities to reduce emissions via reductions in farm inputs (eg, nitrogen fertiliser use, supplementary feed and stock numbers). Several mitigation technologies were assumed to be available in 2030, including low methane genetics for sheep and cattle and biogenic methane and nitrous oxide inhibitors.

The prices used in the modelling include expected NZ ETS prices for the processor-level NZ ETS option and the Partnership's recommended starting price of 11 cents per kilogram of biogenic methane, as well as including 8 cents and 14 cents per kilogram of biogenic methane scenarios as a 'low' and 'high' price respectively (see [table 5](#)).

Because the modelling represents the year 2030, under the processor-level NZ ETS option, free allocation has been phased down from 95 per cent in 2025 to 90 per cent in 2030, in line with the 1 per cent per year phase-out currently legislated.

**Table 5: Scenario details used in modelling**

	Processor-level NZ ETS	Processor-level levy	Farm-level levy
Biogenic methane price (\$ per tonne CO <sub>2</sub> -e)	\$10.86	\$3.93	\$2.86 (low) \$3.93 (medium)

<sup>24</sup> Ministry for Primary Industries. 2022. *Impacts of climate change mitigation policy scenarios on the primary sector*. Retrieved from <https://www.mpi.govt.nz/dmsdocument/53632-Impacts-of-CC-mitigation-policies-on-the-primary-sector> (accessed 6 October 2022).

	Processor-level NZ ETS	Processor-level levy	Farm-level levy
	(\$108.62 with 90% free allocation)		\$5.00 (high)
Biogenic methane price (cents per kilogram CH <sub>4</sub> )	30.41 cents	11 cents	8 cents (low) 11 cents (medium) 14 cents (high)
Nitrous oxide price (\$ per tonne CO <sub>2</sub> -e)	\$10.86 (\$108.62 with 90% free allocation)	\$10.86	\$10.86
Rate of incentive payment (\$ per tonne CO <sub>2</sub> -e mitigated)	\$108.62	\$50	\$50

The modelling suggests that pricing agricultural emissions at the farm level with even a relatively low biogenic methane price could achieve sufficient emissions reductions to meet or exceed the biogenic methane target of 10 per cent reduction from 2017 levels by 2030. The emissions reductions modelled include those resulting from the uptake of mitigation technology, on-farm practice change and land-use change.

Some emissions reductions are expected between 2020 and 2030, regardless of these policy options, as a result of NZ ETS forestry driving land-use change from pasture to forest (see [table 6](#)).

**Table 6: Emissions reductions in 2030 compared with 2020**

	Processor-level NZ ETS (%)	Processor-level levy (%)	Low price (%)	Medium price (%)	High price (%)
Biogenic methane reductions	18	10	12	13	15
Nitrous oxide reductions	10	5	3	5	5
Total agricultural GHG reductions	16	9	10	11	12

Pricing emissions via the NZ ETS would lead to a higher reduction in agricultural emissions that well exceeds Aotearoa New Zealand's emissions reduction targets. This effect is driven by higher prices within the NZ ETS and phase out of free allocation from 95 per cent in 2025 to 90 per cent in 2030, which in combination lead to significantly higher prices than modelled in the farm-level levy option (effectively double the high biogenic methane price scenario for the farm-level levy).

Compared with dairy, the sheep and beef sector emits more greenhouse gases relative to the sector's overall net revenue. This means the impact of emissions pricing is greater for the sheep and beef sector (see [table 7](#)).

Therefore, across all options, the sheep and beef sector is modelled to have the largest reductions in emissions, because of reductions in stock numbers and in production due to reduced revenue and retirement of land (see [table 8](#)). Some emissions reductions from sheep and beef also come from adopting emissions-mitigation technology and farm-systems change. A higher level of support to transition a low-emissions economy may be needed for the sheep and beef sector to manage the immediate impact of emissions pricing. This could be through

transitional support arrangements, while systems and mitigations are developed to reduce their emissions.

**Table 7: Changes in sector net revenue relative to 2030 baseline**

	Processor-level NZ ETS (%)	Processor-level levy (%)	Farm-level levy		
			Low price (%)	Medium price (%)	High price (%)
Dairy	-10	-6	-6	-6	-7
Sheep and beef	-32	-17	-18	-21	-24
Other	1	-1	-1	-1	0
Total	-6	-4	-4	-5	-5

**Table 8: Changes in agricultural production relative to 2030 baseline**

	Processor-level NZ ETS (%)	Processor-level levy (%)	Farm-level levy		
			Low price (%)	Medium price (%)	High price (%)
Milk solids	-8	-5	-4	-4	-5
Lamb	-19	-9	-16	-18	-20
Beef	-44	-38	8	5	-14
Wool	-18	-8	-16	-18	-20
Venison	-37	-20	-13	-15	-17

The farm-level levy options have lower impacts on overall sector net revenue.

The modelling suggests that pricing agricultural emissions may cause a reduction in overall output from the red meat sector and some reduced output from dairy. Beef production increases in some scenarios, because more cost-effective mitigation technologies are assumed for beef cattle compared with sheep, which would allow a degree of switching from running sheep to running beef within the model.

Because the meat and dairy sectors are Aotearoa New Zealand’s two largest export earners, the total revenue of the agriculture sector is significantly affected. These production and revenue effects are much more pronounced in the NZ ETS option. Transitional support may be needed for those most impacted by pricing, including where sequestration or cost-effective mitigations may be limited.

The horticulture, forestry and arable sectors (aggregated in the ‘other’ category) are not greatly affected.

Evidence can be found of demand for carbon neutral products in Aotearoa New Zealand's agricultural international markets,<sup>25, 26, 27</sup> and this may be reflected in price premiums for exports perceived to be carbon neutral. For example, it is estimated there is a positive impact of 11 per cent to 25 per cent on the profits of dairy farms that supply carbon neutral product.

To achieve carbon neutrality, a product's emissions need to be offset by credits from the voluntary carbon market (for example, by credits generated by sequestration outside of the NZ ETS). By reducing on-farm emissions in Aotearoa New Zealand, the amount of voluntary carbon market offsets required to achieve carbon neutrality will be reduced and the potential to supply carbon neutral agricultural products will expand.

Reducing methane emissions by 10 per cent by 2030, in line with the domestic targets, does not mean all Aotearoa New Zealand agricultural exports will automatically be carbon neutral. Therefore, it also does not mean that all agricultural exports will be able to achieve these premiums, but a significant number could be.

## Modelling limitations

It is emphasised that this modelling makes a range of assumptions and has limitations.

- It assumes no uptake occurs of farm-system changes and emissions-mitigation practices in the baseline.
- The effect of the National Policy Statement for Freshwater Management was not considered, which could be significant, because this policy is expected to drive widespread changes in farm practices and land use by 2030.
- Prices for farm outputs are assumed in 2030 to be equivalent to the average of the past five years.
- The modelling framework assumes farm and land-use decisions are driven by profit maximisation and farmers and growers have good information about the options available to them.
- The commercial availability, cost and efficacy of mitigation technologies is highly uncertain. Farm-level pricing is expected to incentivise the development and adoption of these technologies but at an unknown rate.
- Wider economic and international trade impacts are not in the scope of this piece of work but have been included in a separate cost-benefit analysis.

## Impact on global emissions

Dairy, meat and wool products comprise over half of Aotearoa New Zealand's export revenue, with most agricultural production exported into world markets, where it competes with

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<sup>25</sup> Lucci G, Yang W, Ledgard S, Rennie G, Mercer G, Wang M. 2020. *The added value of value-add: Brief synopsis of findings*. Retrieved from <https://ourlandandwater.nz/credence-attributes-synopsis> (accessed 20 September 2022).

<sup>26</sup> Cubero Dudinskaya E, Naspetti S, Arsenos G, Caramelle-Holtz E, Latvala T, Martin-Collado D, Orsini S, Ozturk E, Zanolli R. 2021. European Consumers' Willingness to Pay for Red Meat Labelling Attributes. *Animals* 11(2): 556. <https://doi.org/10.3390/ani11020556>.

<sup>27</sup> Yang W, Rennie G, Ledgard S, Mercer G, Lucci G. 2020. Impact of delivering 'green' dairy products on farm in New Zealand. *Agricultural Systems* 178: 102747. [www.sciencedirect.com/science/article/abs/pii/S0308521X19304093](http://www.sciencedirect.com/science/article/abs/pii/S0308521X19304093)

product from other countries. Any loss in production associated with Aotearoa New Zealand’s emissions reduction will reduce the amount of product sent to world markets.

If suppliers of dairy, meat and wool products in other competing countries fill this gap in world markets, agricultural emissions in these competing countries will likely rise. If those emissions increases are not offset by reductions elsewhere in those economies, this process reduces the effect that Aotearoa New Zealand’s emissions reductions have on overall global emissions. This is known as emissions leakage.

Recent modelling at the Organisation for Economic Co-operation and Development (OECD)<sup>28</sup> analysed the amount of emissions leakage that might arise under different circumstances. In general, emissions leakage in agriculture will be lower if more mitigation technology is available and a wider range of countries reduce agricultural emissions. Other measures are also available to minimise leakage risks, such as specific terms in Aotearoa New Zealand’s free trade agreements.

Considering Aotearoa New Zealand more specifically, the recent report by the Commission on agricultural assistance considered emissions leakage and found that “the risk of emissions leakage is highly uncertain but appears to be low for agriculture in Aotearoa New Zealand in the near term”.<sup>29</sup>

The Government has modelled the policy options considered in this consultation document for one illustrative scenario. This modelling uses the Aglink-Cosimo model. Aglink-Cosimo is an economic model that analyses supply and demand of world agricultural products and is managed and developed by the OECD and United Nations Food and Agriculture Organization. Aglink-Cosimo models Aotearoa New Zealand separately, and its agricultural commodity breakdown includes dairy, beef and sheep meat (see table 9). Agricultural greenhouse gas emissions have been added to Aglink-Cosimo in its most recent update.

Mitigation technology uptake under the farm-level levy results in less emissions leakage compared with the processor-level NZ ETS option. Availability of more and cheaper mitigation technology could reduce leakage further.

**Table 9: Modelled impacts on global emissions**

Farm-level levy medium price	Aotearoa New Zealand emissions change	Leakage		Net global emissions change
		Mt CO <sub>2</sub> -e	Percentage of Aotearoa New Zealand reductions leaked	
	Mt CO <sub>2</sub> -e	Mt CO <sub>2</sub> -e		Mt CO <sub>2</sub> -e
<b>Dairy</b>	-0.7	0.3	37%	-0.4
<b>Beef</b>	-1.4	0	0	-1.4
<b>Sheep meat</b>	-1.6	2.1	133%	0.5
<b>Total</b>	<b>-3.7</b>	<b>2.4</b>	<b>65%</b>	<b>-1.1</b>

<sup>28</sup> OECD (27 October 2021). *Global assessment of the carbon leakage implications of carbon taxes on agricultural emissions*. Retrieved from <https://www.oecd-ilibrary.org/docserver/fc304fad-en.pdf?expires=1662534525&id=id&accname=guest&checksum=D1812E5311987CC82E335C8DC042E3F0> (accessed 1 September 2022).

<sup>29</sup> Climate Change Commission, above n 5, p 21.

## 4.2 Impacts on iwi and Māori

Māori play a significant role in the primary sector. Māori own an estimated 1.51 million hectares of land, across nearly 28,000 blocks – either under private ownership or as registered Māori land owned by Māori authorities, enterprises and individuals. Māori land owners have a substantial primary sector asset base, including \$8.6 billion in sheep and beef farming, \$4.9 billion in dairy farming and \$2.6 billion in other agriculture (including horticulture). These sectors employ 19,170 Māori across them.

Within the Māori economy, pastoral farming makes up a significant proportion of the gross emissions profile (excluding forestry): dairy farming makes up 21 per cent, and sheep and beef farming make up 51 per cent.

Māori land owners operate within a unique set of constraints, including ownership of a relatively high proportion of indigenous forest and hill country areas. The legacy of colonisation has led to loss of higher-quality land and has limited the amount of Māori land used for agricultural purposes. Māori have also lost opportunities to connect, retain and develop their land, which has limited economic prosperity.

Around 450,000 hectares of whenua Māori is farmed (nearly 4 per cent of farmland in Aotearoa New Zealand). Māori farms also have a higher proportion of bush and scrub, at 20 per cent, compared with 8 per cent on the average farm in Aotearoa New Zealand.

Māori own a high proportion of marginal land. Climate change impacts – such as coastal erosion and inundation, flooding, and a higher frequency of weather-induced erosion events – will severely affect marginal land. Coastal and fragile hill country land is particularly vulnerable. Climate change impacts will compound the effects of an agricultural emissions-pricing system and vice versa.

Māori land owners face multiple barriers to managing and developing their land, including land-ownership and governance structures, difficulties with accessing capital and advice, and owning a higher proportion of less productive and marginal land.

These same factors will likely affect Māori land owners' ability to respond to an emissions-pricing system. On less productive and marginal land, opportunities will be limited for land owners to implement mitigations or farm-systems changes to reduce their emissions bill, other than retiring land.

An emissions-pricing system is likely to disproportionately disadvantage Māori land owners, with flow-on effects for Māori more broadly, particularly if no assistance is in place to mitigate some of the impacts. Modelling shows the price of biogenic methane emissions will drive land-use change, which will in turn drive emissions reductions. Most of this land-use change will likely occur in the sheep and beef sector.

It is estimated Māori operate up to 25 per cent of Aotearoa New Zealand's sheep and beef farmland. A high biogenic methane price would therefore significantly and disproportionately affect Māori sheep and beef farmers due to the barriers already mentioned, and the limited emissions-mitigation options available to sheep and beef farmers, compared with dairy farmers.

Land-use changes resulting from an emissions-pricing system are also likely to have a flow-on effect on the Māori economy and communities. For example, any reduction in Aotearoa New Zealand's sheep and beef sector has the potential to affect Māori employment, because nearly 28 per cent of the meat processing workforce is Māori.

Looking ahead at the mitigation options under different stages of development, these are more suited to dairy farmers than sheep and beef farmers, for example, EcoPond<sup>30</sup> and Bovaer.<sup>31</sup> With high rates of Māori-owned sheep and beef farms, this will affect the ability of Māori farmers, growers and land owners to take up mitigation incentives.

It is important to work with Māori land owners to understand how to manage these impacts, to support a transition to a low-emissions, climate-resilient future. As noted above, transitional support, including financial support, could be provided to manage impacts and support development of new opportunities.

The Crown is required to identify how Māori will be affected by proposed policy changes, and to put measures in place to address any disadvantages. Through this consultation process, the Government is seeking to:

- identify the interests of affected Māori
- identify the likely impact of the proposals and decisions on affected Māori
- demonstrate the active steps it intends to take to protect the affected interests.

This document refers to conversations and feedback with and from Māori. The feedback to date highlights the following factors, which have been considered across the wider proposals.

- A holistic approach to land management is needed, including how an emissions-pricing system can complement and work alongside other incentives, such as freshwater and biodiversity policies.
- The fact that whenua Māori and land blocks with multiple owners face administrative burdens. This is inclusive of the different and sometimes complex governance structures that dictate day-to-day management of land. Options that avoid or relieve administrative burdens are needed.
- Māori want to be recognised for their on-farm actions. This means recognising and rewarding mitigations to date.
- The need to preserve, and in some ways empower, Māori decision making, through policies that enable Māori autonomy and cultural practice on farm.
- Māori have advocated for a system that allows for Māori collectives to effectively participate.
- The need for inclusion of Māori in making decisions across the system.

Potential options the Government has already identified to alleviate disproportionate impacts of an emissions-pricing system include:

- ringfencing recycled revenue to be spent on initiatives that would support Māori land owners (eg, additional advisory and extension support, and projects to implement land-use or farm-system changes)
- establishing an independent Māori board to take a Māori-led approach to the use of revenue that has been ringfenced for Māori

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<sup>30</sup> Ravensdown. Undated. *EcoPond*. Retrieved from <https://www.ravensdown.co.nz/products/ecopond> (accessed 1 September 2022).

<sup>31</sup> DSM. Undated. *Bovaer*<sup>®</sup>. Retrieved from <https://www.dsm.com/corporate/sustainability/our-purpose/minimizing-methane-from-cattle.html> (accessed 1 September 2022).



- transitional support (see the section [Transitional support](#))
- enabling Māori landowners to collectivise to report and pay for their emissions to reduce administrative burden (eg, collectivising at a hapū or iwi level)
- recognising sequestration so Māori land owners can use carbon sequestered in vegetation on their whenua to reduce their emissions bill.

The intention is to create an option that empowers te ao Māori and provides opportunities to enhance whenua and livelihoods. This means agreeing on an option free of unnecessary restriction that preserves identity and culture and that is cognisant of future interests.

The Government would like to test these options through consultation and further engagement with its Tiriti partners, including the current consultation process and on to implementation.

### 4.3 Impacts on society and wider economy

Any form of an agricultural emissions-pricing system will have significant flow-on (indirect) effects for wider society, including other sectors and the general public.

The cost and availability to consumers of some food and fibre products may change, at least in the short term, as farmers, growers and the wider agriculture sector adjust to internalising the new cost on emissions. In the longer term, resulting shifts in land use may result in greater availability of lower-emissions food and fibre products.

Aotearoa New Zealand's economy is likely to be affected, including in terms of gross domestic product and exports, as outlined in [section 4.1 Impacts on agriculture](#).

Workforce demands may shift between different sectors and sub-sectors, because some may require fewer workers while others may require more (for example, farm advisors to support farmers and growers through on-farm behaviour change and mitigations).

If agricultural emissions are not priced, or if the price is too low to reduce emissions, Aotearoa New Zealand is unlikely to achieve its emissions reduction goals. In this event, the Government will have choices about how to make up the shortfall.. Other sectors may be required to pick up some of the shortfall in reductions needed. This could affect the waste sector especially (as the other primary emitter of biogenic methane), along with all other sectors that emit long-lived gases (to balance out the emissions of nitrous oxide and carbon dioxide from agriculture).

For any reductions that cannot be achieved by other sectors, a significant fiscal cost will be incurred by the Government and wider economy. This cost would be to purchase offshore mitigations to meet Aotearoa New Zealand's ambitious NDC (currently NDC1) as part of its national Paris Agreement commitments. The Government will have choices about how to fund this.

The Government is therefore considering whether, if agricultural emissions do not reduce as expected as a result of implementing this system, the agricultural sector should be required to pay for any shortfall, by funding additional domestic or international abatement. One option for this is to use levy revenue.

This could provide an enhanced incentive for the sector to reduce its emissions, and help to mitigate impacts on society and the wider economy if it does not.

Without an agricultural emissions-pricing system, agricultural practices will not be driven to shift in a way that reduces Aotearoa New Zealand's contribution to the worst effects of climate change.

Direct costs to farmers and growers are discussed throughout this document. These direct costs may have significant flow-on effects, for example:

- there may be upstream impacts on production if farmers and growers reduce or increase their inputs (eg, agricultural contractors), and downstream effects if processors have fewer or more products to process (eg, meat works or dairy factories). The size of these indirect effects needs to be estimated empirically, but they are typically of a similar order of magnitude to the direct impacts
- there may be offsetting impacts associated with alternative land use and the spending and employment associated with this
- the effect on employment is unclear, not only because of reduced or increased labour requirements but also where affected workers reside (eg, if job losses occur among people living in remote rural communities and any new jobs are filled by people from provincial towns and cities).

## 4.4 Impacts on rural communities

Pricing of agricultural emissions will likely lead to significant changes in farming practice in Aotearoa New Zealand that will present both challenges and opportunities to rural communities. Potential challenges could include a change in spending across rural communities and of quality of life, while opportunities could include new jobs and retraining arising from alternative land uses. Potential socioeconomic effects include, but are not limited to:

- a significant change in spending across rural communities
- reduction in jobs or hours worked
- further de-population and accompanying decline in community services
- reduction in quality of living
- increased stress and mental health issues.

Rural communities tend to have different demographics from the average, which could make them more exposed to the interactions of these potential impacts. For instance, an increase in isolation and a reduction of wellbeing may occur for people who are in a community affected by land-use changes, and who are unable to relocate (eg, due to age and stage of life or iwi and hapū connections to the whenua).

However, the proposed emissions-pricing system also offers an opportunity for farmers, growers and rural communities to transition to more resilient and sustainable land use and/or business practices. This could strengthen the community, for instance, by diversifying the job market.

Alternative land uses could create new job and training opportunities. Plus other industries, like tourism, which are currently facing staff shortages, may be able to expand through retraining and employing primary sector workers.

The Government and sector partners are promoting programmes to maximise these opportunities by helping farmers, growers and other rural people to manage pressure.

[Section 2.5 How does agricultural emissions pricing fit with other government work](#)

programmes? outlines the support available to the sector to increase opportunities and minimise negative impacts by: reducing the risk of widespread financial hardship, improving farming systems (eg, through extension services and programmes) and creating other opportunities for land use.

#### **Question 10**

Do you think the proposed system for pricing agricultural emissions is equitable, both within the agriculture sector and across other sectors, and across New Zealand generally? Why, and what changes to the system would be required to make it equitable?

#### **Question 11**

In principle, do you think the agricultural sector should pay for any shortfall in its emissions reductions? If so, do you think using levy revenue would be an appropriate mechanism for this?

#### **Question 12**

What impacts or implications do you foresee as a result of each of the Government's proposals in the short and the long term?

#### **Question 13**

What steps should the Crown be taking to protect relevant iwi and Māori interests, in line with Te Tiriti o Waitangi? How should the Crown support Māori landowners, farmers and growers in a pricing system?

# Section 5: Implementation

## 5.1 Operational framework and agency

An implementation agency will need to be appointed in legislation for the farm-level levy and interim processor-level levy. Ideally, the same agency would administer both levies, but this may not be practicable. It is likely more than one agency may need to implement and administer the system.

A decision on governance and the lead implementation agency (and any supporting agencies) will need to be made this year. Various functions are required to implement an agricultural emissions-pricing system. The functions fall into three categories.

- **Product and service delivery** – people management, verification services and enforcement require the capability to directly engage with farmers, growers and approved agents and the details of the greenhouse gases emitted from their farm systems. Rural accountants, advisors and the wider agricultural industry could support aspects of participant management and verification functions by the implementation agency.
- **Delivery support** – payment management and processing and the IT system build, and management. The IT system build consists of payment systems, data interoperability systems and the emissions calculator.
- **Operational and technical policy** – including stakeholder management, regulation development, technical guidance and decisions, emissions methods and tools, and methods to measure the success of the policies.

These functions are listed in more detail in [table 10](#).

**Table 10: System overview – implementation of an on-farm pricing scheme**

<b>Product and service delivery</b>	<b>People management</b>	<b>Verification services</b>	<b>Enforcement</b>
Front-stage interactions that interface with users	<ul style="list-style-type: none"> <li>• Call centre</li> <li>• Webpage</li> <li>• Physical publications</li> <li>• Regional offices</li> <li>• Technical support and resolution</li> </ul>	<ul style="list-style-type: none"> <li>• On-farm audit</li> <li>• Other data sets: National Animal Identification and Tracing, freshwater farm plans</li> </ul>	<ul style="list-style-type: none"> <li>• Voluntary compliance, assisted compliance, directed compliance and enforced compliance</li> </ul>
	<i>Implementation agency will carry out this function; could be supported by rural professionals and/or farm advisors</i>	<i>Parts of this function could be supported and/or partly carried out by rural accountants</i>	<i>Implementation agency will carry out this function</i>
<b>Delivery support</b>	<b>Payment management</b>	<b>Processing</b>	<b>Information technology system</b>
Back-stage functions that directly support the delivery of services to users	<ul style="list-style-type: none"> <li>• Invoicing</li> <li>• Debt collection</li> </ul>	<ul style="list-style-type: none"> <li>• Registering users in the system</li> <li>• Changes in ownership</li> <li>• Receiving emissions-related data</li> </ul>	<ul style="list-style-type: none"> <li>• Emissions calculation and reporting tool</li> </ul>

	<i>Parts of this function could align with Inland Revenue</i>	<i>Parts of this function could align with Inland Revenue</i>	<i>Currently being scoped by Ministry for Primary Industries; will be carried out by the implementation agency</i>
<b>Operational and technical policy</b>	Including: stakeholder management, regulation development, technical guidance and decisions, emission and sequestration methods and tools, methods to measure the success of the policies		
	Enterprise support: enterprise audit and compliance; human resources, talent, learning and development; engagement and communications; finance; information technology; legal services; vision, strategy, government policy; government relationships; workforce management; training and information flows		

For each function, several agencies could pick up responsibility, each with particular strengths. These could include:

- Inland Revenue|Te Tari Taake – tax system, data and enforcement
- Environmental Protection Authority|Te Mana Rauhi Taiao – NZ ETS registry
- Ministry for Primary Industries|Manatū Ahu Matua – agricultural emissions science, National Animal Identification and Tracing system
- Ministry for the Environment|Manatū Mō Te Taiao – climate change and emissions-pricing system, waste levy systems
- Land Information New Zealand|Toitū Te Whenua – land information systems.

The Government is consulting with these agencies regarding implementation of the agricultural emissions-pricing system.

It may be necessary to establish a new entity, if new functions are created and no appropriate body exists that can perform all or many of these functions.<sup>32</sup> However, creating a new public body involves considerable expense and should occur only if no pre-existing bodies are capable of performing the new function. In most cases, it is more efficient to give new powers to an existing public body than it is to create a new body, even if it requires further structural change.

A new entity could reside inside an agency, with staff seconded from other agencies with particular skills or functions. One current example is the COVID-19 All-of-Government Response Group,<sup>33</sup> which lies within the Department of the Prime Minister and Cabinet but includes staff seconded from across central government and the health sector. A similar model could be used for the implementation of the agricultural emissions-pricing system.

<sup>32</sup> Legislation Design and Advisory Committee. 2021. *Legislation Guidelines – 2021 Edition*. Retrieved from <http://www.ldac.org.nz/assets/documents/LDAC-Legislation-Guidelines-2021-edition.pdf> (accessed 1 September 2022).

<sup>33</sup> Department of Prime Minister and Cabinet|Te Tari o te Pirimia me te Komiti Matua. Undated. *COVID-19 Group*. Retrieved from <https://dpmc.govt.nz/our-business-units/covid-19-group> (accessed 1 September 2022).

## 5.2 Reviewing the implementation system in 2030

Changes will occur across sectors as part of Aotearoa New Zealand's transition to a low-emissions future. These changes will influence policies to reduce emissions and the associated cost and opportunities. It will be important to ensure the design of a farm-level pricing system is fit for purpose and appropriate, after its establishment in 2025. To enable this, the Government proposes a post-implementation review in 2030 that could consider:

- the extent to which agricultural emissions have reduced
- projected future emissions from the sector
- opportunities to improve the effectiveness of the farm-level pricing system (eg, through the adoption of a marginal pricing model)
- the social and economic impact of the levy to date
- assessment of the level of support provided to the sector.

# Section 6: Audit, verification and compliance

Various components will need to be included in primary legislation, and the Government's proposals include the following.

- **Verification and auditing** – that audit and verification processes are cost effective and aligned with other existing and planned farm-audit systems, as far as practicable, for on-farm audits.
- **Penalties and offences** – a proportionate penalties and offences regime that includes provisions for infringement offences to be set by regulation and a model to calculate penalties for a set of specific offences via an automated formula.
- **Cost recovery** – that the costs of administering the system are recovered from individuals, in line with the Government's cost-recovery principles.

## 6.1 Audit and verification processes

The preferred approach to audit and enforcement is a cost-effective system that:

- sets clear expectations around the evidence to be gathered and held for a seven-year time period
- has minimal annual reporting requirements in addition to the emissions numbers and approved incentives
- contains a random audit function that is linked to an exceptions reporting system, but with the implementation agency retaining discretion to audit as it requires
- has proportionate penalties for non-compliance (eg, failure to report, false reporting and non-payment). The proposal is to align with other existing and planned farm-audit systems to the extent it is practicable for on-farm audits (eg, industry assurance programmes or freshwater farm plan audits).

The scale of auditing should be proportionate to the risk of non-compliance and complexity of reporting requirements. For example, a simple core farm-level system could have a higher trust model, with significant penalties for non-compliance, whereas a system with more detailed reporting requirements may require additional compliance.

### Monitoring and verification

To provide the data and information needed for compliance and enforcement, processes will need to be developed that monitor the reporting system. This will help provide quality assurance as to the validity of the data being used. This assurance could include sense checks against other known information such as that held by Inland Revenue, or regional council data on the scale of the farm and farm plans, as well as other comparable enterprises. Any outliers could then be flagged for further inspection.

The correct use of the system by the user will also need to be checked, particularly when the user may be an agent of the owners, who may not understand all the aspects of the farm or the system. This will ensure integrity of the subsequent billing processes.

Monitoring and verification of the payment system will also be required, to check that the correct invoice has been sent and payment received in a timely manner.

## Auditing

Automated processes can be set up to flag errors in data input or system use, and to flag those who may not be compliant with the requirements set out in regulations. On top of this, auditing will be needed, to ensure compliance and provide evidence for any enforcement.

Given the large number of participants (around 23,000), they cannot all be audited in detail. Careful checking may be needed for those who emit most, with random selection of a few others for auditing.

It is likely that on-farm visits will be needed, to access the data and information required for a detailed audit. This would imply those undertaking the audit must have the powers to enter properties and to request the required evidence.

One aspect to be considered is whether the Government does the verification or enables private parties to do so. Third party verification is widely used in the food and food-related systems (including local authorities under the Food Act 2014).<sup>34</sup>

The model for the Food Act 2014 is that regulated parties are required to have a plan as to how they will comply with requirements for matters like safety and export (sometimes customised, sometimes from standard templates), and their verifier monitors and confirms their compliance with the plan. There is a parallel alignment with farm plans that may be appropriate here.

## 6.2 Penalties and offences

The Government is proposing a penalties and offences regime similar to that established under the CCRA).<sup>35</sup> This includes provisions for infringement offences to be set by regulations, and for a model to calculate penalties for a set of specific offences through an automated formula. The offences and the penalty formula would be legislated.

More details on the penalties and offences will be needed in the development of the emissions-pricing system, which will require working with the Ministry of Justice | Tāhū o te Ture. It is also proposed that any offence committed by an employee or agent shall be deemed to have been also committed by their employer (the point of legal responsibility).

## 6.3 Enforcement mechanisms

To ensure a high level of compliance, some enforcement will be needed. Powers to invoke and enforce penalties for non-compliance will be needed in legislation, with aspects also contained within regulations. The Government will need to determine the levels of offences, infringements, and policies around warnings. This will also include setting the rates of penalties and the process for invoking them.

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<sup>34</sup> See the [Food Act 2014](#).

<sup>35</sup> This is likely to include wording similar to that in [sections 30M–30V, Climate Change Response Act 2002](#).



## 6.4 Cost recovery

Funding is required to administer and run the emissions-pricing system. The Government is proposing that the system is self-funded.

While the pricing system may raise revenue that could be used, other uses for the revenue may be identified in future. For some services, fees to individual participants rather than general levy funding may be more appropriate.

This means cost recovery may be required to meet the system costs. The Government's proposal is to include a provision in legislation that could enable the regulator to recover the costs from individuals of running and administering the pricing system in future.

If cost recovery is implemented, it would be subject to further consultation, and confirmation through regulation.

### What is cost recovery?

Cost recovery involves charging those who benefit from, or otherwise create the need for, services. In this case, the need to create and run this emissions-pricing system (its services and its costs) has been created by the emissions of greenhouse gases from the agriculture sector and the need to reduce these emissions. The services involved in administering the farm-level levy, which could be cost recovered, include:

- product and service delivery:
  - participant management, including participant registration, processing emissions returns, changes to land ownership or leasing arrangements, and registering sequestration from on-farm vegetation (when recognised)
  - verification services
  - enforcement
- operational and technical policy:
  - stakeholder management
  - regulation development
  - technical guidance and decisions
  - emissions methods and tools
  - methods to measure the success of the policies.

### How would cost recovery work?

The cost recovery of the services involved in administering the levy would be assessed against the Government's cost-recovery principles:

- **transparency** – costs are transparent
- **justifiability** – costs are reasonable

- **efficiency**<sup>36</sup> – net benefits are maximised
- **equity** – costs are fair.

The principles build on each other. Transparency and justifiability provide the foundation. If these have been met, then the full costs of the services are recovered, unless a strong efficiency or equity reason exists for why this should not occur.

These principles and the process for assessing the costs would be legislated. They are recommended by the Office of the Auditor-General and are included in the Food Safety Law Reform Act 2018<sup>37</sup> and CCRA.

The cost-recovery charges, if enabled, would be set in regulation. This would happen once services, expenditure and charges (including options around these) are more fully scoped and have been subject to further consultation.

## Legislative processes and timeframes

The Minister of Agriculture and Minister of Climate Change will publish a report on an alternative pricing system by the end of December 2022.

Subject to Cabinet decisions, the Government will introduce a Bill to implement the agricultural emissions-pricing system in 2023 and develop initial regulations during 2024. The development of the IT system will also occur during this period.

Further opportunities will be available to provide feedback on the pricing system during the select committee process and consultation on proposed regulations.

### Question 14

Do you support the proposed approach for verification, compliance and enforcement? Why, and what improvements should be considered?

### Question 15

Do you have any other priority issues that you would like to share on the Government's proposals for addressing agricultural emissions?

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<sup>36</sup> Efficiency is about charging those who benefit from services to encourage them to use services only when they provide sufficient benefits, or charging those who cause the need for the service, to encourage them to reduce behaviour that causes that need. Efficiency also includes consideration of administration costs, namely that administratively simple approaches may be better than using complicated approaches to more precisely charge users. Finally, efficiency means the Government should only recover costs and not seek to make a profit.

<sup>37</sup> See [Food Safety Law Reform Act 2018](#).

# Consultation questions

**Question 1:** Do you think modifications are required to the proposed farm-level levy system to ensure it delivers sufficient reductions in gross emissions from the agriculture sector? Please explain.

**Question 2:** Are tradeable methane quotas an option the Government should consider further in the future? Why?

**Question 3:** Which option do you prefer for pricing agricultural emissions by 2025 and why?

- (a) A farm-level levy system including fertiliser?
- (b) A farm-level levy system and fertiliser in the New Zealand Emissions Trading Scheme (NZ ETS)
- (c) A processor-level NZ ETS?

**Question 4:** Do you support the proposed approach for reporting of emissions? Why, and what improvements should be considered?

**Question 5:** Do you support the proposed approach to setting levy prices? Why, and what improvements should be considered?

**Question 6:** Do you support the proposed approach to revenue recycling? Why, and what improvements should be considered?

**Question 7:** Do you support the proposed approach for incentive payments to encourage additional emissions reductions? Why, and what improvements should be considered?

**Question 8:** Do you support the proposed approach for recognising carbon sequestration from riparian plantings and management of indigenous vegetation, both in the short and long term? Why, and what improvements should be considered?

**Question 9:** Do you support the introduction of an interim processor-level levy in 2025 if the farm-level system is not ready? If not, what alternative would you propose to ensure agricultural emissions pricing starts in 2025?

**Question 10:** Do you think the proposed systems for pricing agricultural emissions is equitable, both within the agriculture sector, and across other sectors, and across New Zealand generally? Why and what changes to the system would be required to make it equitable?

**Question 11:** In principle, do you think the agricultural sector should pay for any shortfall in its emissions reductions? If so, do you think using levy revenue would be an appropriate mechanism for this?

**Question 12:** What impacts or implications do you foresee as a result of each of the Government's proposals in the short and long term?

**Question 13:** What steps should the Crown be taking to protect relevant iwi and Māori interests, in line with Te Tiriti o Waitangi? How should the Crown support Māori land owners, farmers and growers in a pricing system?

**Question 14:** Do you support the proposed approach for verification, compliance and enforcement? Why, and what improvements should be considered?

**Question 15:** Do you have any other priority issues that you would like to share on the Government's proposals for addressing agricultural emissions?



# Appendix one: Section 215 report

Table 11 provides a summary of what will be addressed in the section 215 report and where you can find the information within the consultation document about the proposed alternative pricing system.

**Table 11: Application of consultation document to section 215**


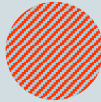

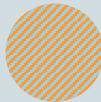


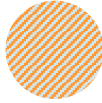
Matter recognised under section 215	How it is addressed in the consultation document
<p><b>1. How emissions from those activities would be priced and accounted for</b></p>	<ul style="list-style-type: none"> <li>• A core, split-gas, farm-level levy system is to commence in 2025, with enhancements to improve effectiveness built in over time.</li> <li>• An interim processor-level levy is proposed as a transitional step if the farm-level pricing system is not ready in 2025.</li> <li>• Options for how emissions from the application of synthetic nitrogen fertiliser could be priced (within the farm-level levy or via the New Zealand Emissions Trading Scheme (NZ ETS)).</li> <li>• Recognition for sequestration from riparian margins and management of indigenous vegetation as an adjacent contractual system, with the long-term goal of integration of new vegetation categories into the NZ ETS.</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li>• <a href="#">3.4 Technical design of a farm-level agricultural emissions pricing system</a></li> <li>• <a href="#">3.5 Recognition of sequestration from on-farm vegetation</a></li> <li>• <a href="#">3.6 Options for pricing synthetic nitrogen fertiliser emissions</a></li> <li>• <a href="#">3.7 Future enhancements</a></li> <li>• <a href="#">3.8 Interim processor-level levy</a></li> </ul>
<p><b>2. Whether other activities or participants would be included in the system</b></p>	<ul style="list-style-type: none"> <li>• Farmers and growers who are registered for goods and services tax and meet the threshold will be included in the farm-level system.</li> <li>• Minor-emitting sectors have been excluded initially.</li> <li>• Processors, as defined in the Climate Change Response Act 2002 (CCRA), will be included for processor-level system (if implemented).</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li>• <a href="#">What is the emissions price imposed on?</a></li> <li>• <a href="#">Who would pay an interim processor-level levy?</a></li> </ul>
<p><b>3. What methodologies would be used for calculating emissions and removals</b></p>	<ul style="list-style-type: none"> <li>• Farmers and growers will need to register and report via a centralised calculator. The calculation methods for determining the emissions reporting amounts will be transparent and publicly available, with data requirements and the methodology for calculating emissions set out in regulations.</li> </ul>

Matter recognised under section 215	How it is addressed in the consultation document
	<ul style="list-style-type: none"> <li>Processors will continue to report via the New Zealand Emissions Trading Register (if processor-level options are implemented).</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li><a href="#">Reporting of emissions and payment of an emissions price</a></li> <li><a href="#">Calculating the interim processor-level levy</a></li> </ul>
<p><b>4. What assistance, if any, would be given to participants</b></p>	<ul style="list-style-type: none"> <li>The structured assistance suggested by the Climate Change Commission is complex and challenging to implement, so an alternative has been proposed for the farm-level pricing system.</li> <li>Farmers and growers would receive an incentive payment for a range of technology uptakes and practice changes to achieve emissions reductions and provide a marginal price signal. These incentives will act as a proxy for assistance and provide an opportunity to offset liabilities owed through the levy.</li> <li>Transitional support could be considered where it does not undermine the intended price signal.</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li><a href="#">Incentivising on-farm emissions reductions</a></li> <li><a href="#">Transitional support</a></li> </ul>
<p><b>5. How emissions of methane would be treated relative to other greenhouse gases, including whether, how, and what types of removals would be recognised</b></p>	<ul style="list-style-type: none"> <li>A split-gas levy is proposed with separate levy rates for biogenic methane and long-lived gases (nitrous dioxide and carbon dioxide), reflecting the different nature of the gases and Aotearoa New Zealand’s split-gas targets.</li> <li>Recognition would be given to approved mitigation actions and sequestration.</li> </ul> <p>Refer to the following sections. for more details:</p> <ul style="list-style-type: none"> <li><a href="#">3.2 Overview of the Government’s proposed pricing system</a></li> <li><a href="#">3.5 Recognition of sequestration from on-farm vegetation</a></li> </ul>
<p><b>6. What information participants would need to provide and how that information would be used, shared or made publicly available</b></p>	<ul style="list-style-type: none"> <li>Data requirements and corresponding evidence requirements will be set out in regulations. Where practicable, data requirements will align with requirements for other purposes.</li> <li>Basic data requirements include farm areas, livestock reconciliations, livestock production and synthetic nitrogen fertiliser.</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li><a href="#">Reporting of emissions and payment of an emissions price</a></li> <li><a href="#">Data and evidence required for emissions reporting</a></li> </ul>

Matter recognised under section 215	How it is addressed in the consultation document
<p><b>7. How participants and relevant industry groups would be engaged with designing, implementing and operating the system</b></p>	<ul style="list-style-type: none"> <li>• The proposal builds on the recommendations of the He Waka Eke Noa – Primary Sector Climate Action Partnership (the Partnership).</li> <li>• There is a role for the sector and iwi and Māori related to advising on the strategy for revenue recycling, including specific funding to support Māori land owners and agribusiness. This may require the creation of a new advisory body (or bodies).</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li>• <a href="#">Appendix 2: He Waka Eke Noa – Primary Sector Climate Change Action Partnership</a></li> <li>• <a href="#">Governance and decision making</a></li> </ul>
<p><b>8. Who would be responsible for administering the system?</b></p>	<ul style="list-style-type: none"> <li>• The Ministers, with advice from the Climate Change Commission, will set the levy rate.</li> <li>• Implementation agency (or agencies) will implement the pricing system, including the day-to-day management of registration, reporting, payment verification and auditing.</li> <li>• The Ministers, Māori and sector advisory body (or bodies) will manage revenue recycling.</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li>• <a href="#">Setting the agricultural emissions price</a></li> <li>• <a href="#">Governance and decision making</a></li> <li>• <a href="#">5.1 Operational framework and agency</a></li> </ul>
<p><b>9. What amendments would need to be made to legislation to enable the system to work?</b></p>	<ul style="list-style-type: none"> <li>• Depending on advice from the Parliamentary Counsel Office, either the CCRA will be amended or new legislation will be drafted to define the alternative pricing system.</li> <li>• Amendments will be needed to the CCRA to revoke any provisions no longer required.</li> <li>• Secondary legislation will be needed for the operational requirements.</li> </ul> <p>Refer to the following sections for more details:</p> <ul style="list-style-type: none"> <li>• <a href="#">NZ ETS backstop (processor-level option)</a></li> <li>• <a href="#">Reporting of emissions and payment of an emissions price</a></li> <li>• <a href="#">Setting the agricultural emissions levy price</a></li> <li>• <a href="#">Farm-level levy coupled with an incentive payment</a></li> <li>• <a href="#">3.5 Recognition of sequestration from on-farm vegetation</a></li> <li>• <a href="#">3.8 Interim processor-level levy</a></li> <li>• <a href="#">5.1 Operational framework and agency</a></li> <li>• <a href="#">Section 6: Audit, verification and compliance</a></li> <li>• <a href="#">6.2 Penalties and offences</a></li> <li>• <a href="#">6.3 Enforcement mechanisms</a></li> <li>• <a href="#">6.4 Cost recovery</a></li> <li>• <a href="#">Legislative processes and timeframes</a></li> </ul>

# Appendix two: He Waka Eke Noa – Primary Sector Climate Change Action Partnership Implementation milestones

**Table 12: Implementation milestones and due dates**

	Milestone	Due date	Status	
<b>1</b>	For 25 per cent of farms, a person responsible for farm management holds a documented annual total of on-farm emissions, by methods and definitions accepted by the He Waka Eke Noa Steering Group	31 December 2021		Complete 61 per cent of farms reached
<b>2</b>	For all farms, a person responsible for farm management holds a documented annual total of on-farm emissions, by methods and definitions accepted by the He Waka Eke Noa Steering Group	31 December 2022		Very likely will not be met
<b>3</b>	A pilot of a farm-level accounting and reporting system has been completed across a range of farm types	1 January 2024		Can be met
<b>4</b>	A system for farm-level accounting and reporting of 2024 agricultural emissions at farm level is in use by all farms	1 January 2025		Likely will not be met
<b>5</b>	Guidance is provided to farmers on how to measure and manage emissions through farm planning	1 January 2021		Complete
<b>6</b>	A quarter of farms have a written plan in place to measure and manage their emissions	1 January 2022		Not complete 21 per cent of farms reached
<b>7</b>	All farms have a written plan in place to measure and manage their emissions	1 January 2025		Very likely will not be met



# Appendix three: Alignment between the emissions reduction plan and Government’s wider work programme

**Table 13: Alignment between emissions reduction plan action areas and the Government’s wider agricultural work programme**

Initiative(s)	Details	Main action area(s)
<p><b>Work on the New Zealand Emissions Trading Scheme (NZ ETS)</b></p> <p>NZ ETS settings have significant impacts for the agriculture sector (eg, through pricing of emissions in processing and transport).</p> <p>This work could affect what recognition farmers and growers can obtain for removals on their farms (eg, through establishing small woodlots or undertaking work to support native forest regeneration).</p>	Looking at the balance of gross and net emissions reductions achieved through pricing of emissions in Aotearoa New Zealand	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Working towards a revised permanent forest category in the NZ ETS	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Investigating new sources of emissions removals in Aotearoa New Zealand’s Greenhouse Gas Inventory, targets and the NZ ETS	<ul style="list-style-type: none"> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Investigating how carbon sinks from indigenous biodiversity are supported through Aotearoa New Zealand’s pricing measures	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
<p><b>Integrated Farm Planning (IFP) Programme</b></p> <p>Established to bring together all farm-planning requirements (eg, freshwater, climate change, animal welfare, biosecurity and people management).</p> <p>A whole-of-farm approach to streamline compliance, reduce duplication and provide a structured approach to identifying risks and opportunities to lift business and stewardship performance.</p>	Having greenhouse gas farm plans integrated within the climate module of the IFP, with guidance available for farmers and growers to follow (around 21 per cent of farmers and growers already have a written plan in place)	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Updating IFP guidance according to the agricultural emissions-pricing system, once established	<ul style="list-style-type: none"> <li>• Price agricultural emissions</li> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Aligning the IFP with other modules (eg, freshwater farm plans), where possible and appropriate	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> </ul>
	Focusing the IFP framework, data and tools workstream on building common data standards and enabling technologies to support this integration	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> </ul>

Initiative(s)	Details	Main action area(s)
<p><b>Freshwater Farm Plan Regulations</b></p> <p>A practical tool for councils, communities, farmers and growers, emerging from the Government's commitment to improving freshwater health and management, and restoring Te Mana o te Wai.</p>	Working towards achievement of freshwater outcomes, while reducing regulatory burdens, using the Essential Freshwater work programme	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> </ul>
	Identifying clear farm practice, ecosystem health and catchment outcomes, and demonstrating how to achieve these	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> </ul>
	Incorporating the Freshwater Farm Plan Regulations as a module within the IFP framework	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> </ul>
	Exploring the use of the Freshwater Farm Plan system to support implementation of emissions pricing	<ul style="list-style-type: none"> <li>• Price agricultural emissions</li> <li>• Support producers to make changes</li> </ul>
<p><b>Proposed National Policy Statement for Indigenous Biodiversity</b></p>	Setting out the objectives and policies to identify, protect, manage and restore indigenous biodiversity under the Resource Management Act 1991. This would have implications for the management of farmland	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> </ul>
<p><b>Climate Emergency Response Funding (announced in May 2022)</b></p> <p>This funding applies to various workstreams, with a view to helping farmers and growers get new tools and technology to reduce on-farm emissions more quickly.</p>	Boosting existing on-the-ground support to help farmers and growers adapt their practices and adopt new technology	<ul style="list-style-type: none"> <li>• Accelerate mitigation technologies</li> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Developing specialised climate-focused extension services to support an equitable transition	<ul style="list-style-type: none"> <li>• Accelerate mitigation technologies</li> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
	Engaging with mātauranga-based approaches to support whenua Māori owners with climate change mitigation, including the establishment of a Māori climate platform and development of a Māori climate strategy	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> <li>• Enable Māori-led solutions</li> </ul>
	Undertaking essential work to support the development of a pricing mechanism for agricultural emissions from 2025	<ul style="list-style-type: none"> <li>• Price agricultural emissions</li> </ul>
<p><b>Centre for Climate Action on Agricultural Emissions</b></p> <p>This initiative is an important part of a range of research programmes to respond to climate change by reducing and measuring agricultural emissions.</p>	Driving a step change in mitigation technology innovation and uptake on farms. Further information on climate change and agricultural research can be found at <a href="http://www.mpi.govt.nz">www.mpi.govt.nz</a>	<ul style="list-style-type: none"> <li>• Accelerate mitigation technologies</li> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>

Initiative(s)	Details	Main action area(s)
<p><b>Extension Services Programme</b></p> <p>This programme funds farmer- and grower-led catchment projects (and other collectives) to support sustainable land use and improve outcomes.</p>	<p>Delivering initiatives to improve economic, environmental and farmer wellbeing outcomes, including helping farmers and growers to:</p> <ul style="list-style-type: none"> <li>• calculate their agricultural greenhouse gas emissions</li> <li>• understand changing environmental regulations</li> <li>• improve the health of their soils</li> </ul>	<ul style="list-style-type: none"> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> </ul>
<p><b>Other climate change-related programmes</b></p>	<p>Funding various programmes related to climate change, including:</p> <ul style="list-style-type: none"> <li>• One Billion Trees Programme</li> <li>• Erosion Control Funding Programme for the Gisborne District</li> <li>• Hill Country Erosion Programme for councils</li> <li>• Adverse Events Support Programme</li> <li>• Greenhouse Gas Inventory Research Fund</li> <li>• Sustainable Land Management and Climate Change Programme</li> <li>• Māori Agribusiness Extension Programme</li> <li>• AgMatters.nz website</li> <li>• Primary Industry Advisory Services</li> <li>• Funding and Rural Support Programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Accelerate mitigation technologies</li> <li>• Support producers to make changes</li> <li>• Transition to lower emissions land uses and systems</li> <li>• Enable Māori-led solutions</li> </ul>

# Appendix four: Main features of the NZ ETS processor-level backstop option

**Table 14: Main features of the New Zealand Emissions Trading Scheme (NZ ETS) processor-level backstop option**

Processor-level backstop option feature	Explanation
<p><b>Agricultural processors are required to pay for emissions within the NZ ETS. Processors choose how costs and incentives are passed on to farmers and growers.</b></p>	<p>For emissions associated with livestock, this is the processor of the animal product (meat or milk).</p> <p>For emissions associated with synthetic nitrogen fertiliser, this is the manufacturer or importer of the fertiliser.</p>
<p><b>Ninety-five per cent free allocation is provided on an output basis, with a 1 percentage point phase out per year.</b></p>	<p>This means that, initially, only 5 per cent of emissions will be priced. This assistance by way of free allocation will gradually reduce over time, to give the sector time to adapt.</p>
<p><b>Revenue from the NZ ETS is used to fund public investment on climate-related initiatives.</b></p>	<p>Revenue recycling could fund science for mitigation technologies and practices and provide incentives for the uptake of these on farms.</p>
<p><b>Sequestration is recognised under existing NZ ETS policies, with no additional on-farm vegetation rewarded.</b></p>	<p>Forest owners and those with registered forestry rights or leases over post-1989 forests can earn carbon credits by joining the NZ ETS. This would continue.</p> <p>This means that small-scale vegetation (eg, riparian planting) not recognised under the NZ ETS would not be factored into the emissions price.</p> <p>Work to more accurately measure carbon stock changes and relating these changes to management interventions was funded in Budget 2022, with a view to investigating policies that could enhance sequestration in the future.</p>

# Appendix five: On-farm vegetation and the concept of additionality

## Does additionality matter?

The Government considers it is important that vegetation included in its regulated carbon pricing mechanisms is generally consistent with the principle of 'additionality'. Meaning that additional carbon is removed from the atmosphere due to specific interventions and would not have otherwise occurred.

## Why does additionality matter?

Many of the world's natural systems both emit and remove greenhouse gas emissions from the atmosphere. An example of this is trees that photosynthesise to absorb carbon from the atmosphere as they are growing, but when they fall over and decompose, they release carbon to the atmosphere.

Because of this, carbon pricing and market mechanisms generally seek to set accounting regimes that try to discern the changes in greenhouse gas emissions and removals that are 'human induced' from those that might have otherwise occurred. This ensures pricing is targeted towards the actions that people and businesses can take that remove more carbon from the atmosphere or reduce emissions relative to what would have otherwise happened.

Additionality also matters from a public interest and credibility perspective, where it is important that public money spent leads to effective and real change (rather than funding activities that were already happening or going to happen without that funding).

## How does the NZ ETS treat additionality? How do Aotearoa New Zealand's targets treat additionality?

Generally, the New Zealand Emissions Trading Scheme treats all new forests planted after 31 December 1989 as 'additional'. Aotearoa New Zealand's climate change targets (such as its Nationally Determined Contribution under the Paris Agreement) work similarly. In future, the country's targets may also be able to account for increases in carbon in vegetation planted before 1990 (pre-1990 forests) where this is the result of management interventions such as pest management. However, discerning these changes can be difficult in practice and may only measurably occur over long timescales (eg, decades).

The Government is currently investing in research that will support updates to accounting for carbon in pre-1990 and post-1989 forests through the MaxCarbon research programme supported through Budget 2022.

## **How does the Government propose to treat additionality?**

### **Management of indigenous vegetation**

The Government's proposal is to reward additional carbon that arises from a management action. This approach does not include a base year. An additional management action of indigenous vegetation can result in carbon that would not have been sequestered otherwise and is therefore considered 'additional'. For example, by excluding stock from regenerating bush to allow tree species to establish and grow, or carrying out pest control, additional carbon is sequestered from the extra vegetation.

The Government considers that ongoing action to continue to exclude stock or carry out pest control could meet the additionality threshold. This method reduces the administrative burden because there is no requirement to prove the year of establishment or stock exclusion.

### **Riparian vegetation**

A baseline year of 2008 is proposed for riparian strips, because 2008 aligns with recommendations made by the Partnership where better satellite imagery is available.

# Appendix six: Vegetation categories proposed by the Partnership that are not being considered

Unlike the Partnership, the Government is not proposing to recognise indigenous vegetation established after 2008 or any cyclical vegetation. The indigenous vegetation established after 2008 category is eligible for the New Zealand Emissions Trading Scheme (NZ ETS). Although cyclical vegetation is in the NZ ETS, for small areas of vegetation, such as those proposed by the Partnership, the cost of administration outweighs the benefit of recognition.

Inclusion of smaller areas of land (less than a hectare) or types of land uses that get regularly pruned or cleared will significantly increase the cost and complexity of the scheme for both the participant and regulator relative to the benefits it provides.

For the first four categories in table 15, the land owner would be required to regularly monitor and report on carbon stored in the vegetation every few years (coming at administrative cost to both the land owner and regulator). When trees are trimmed or cut down, the carbon is released back into the atmosphere, and any payment received for that carbon needs to be paid back. The cost of measurement, verification and audit will not be effective for the implementation agency that is partially funded through cost recovery by the levy.

**Table 15: Partnership’s suggested vegetation categories Government does not propose to recognise for sequestration**

Partnership’s proposed categories	Description	Why we are not recognising these
<b>Perennial cropland</b>	An orchard and/or vineyard greater than 0.25 hectares in size.	Pruning and maintenance of trees means amount of carbon stored in the woody vegetation regularly changes.
<b>Scattered forest</b>	Minimum of 0.25 hectares for any area counted with minimum stocking rate of 15 stems per hectare. Scattered forest is not eligible if it is more than 1 hectare, and more than 30 per cent canopy cover at maturity, and more than 30 metres wide (ie, once it meets the New Zealand Emissions Trading Scheme (NZ ETS) criteria).	It is difficult to monitor what trees are included or excluded from the system across time. Errors in this could leave the farmer liable for repayment.
<b>Shelterbelts</b>	A linear vegetation feature consisting of one or more rows of trees and/or shrubs planted on or after 1 January 2008 with a minimum linear canopy cover of 90 per cent. The shelterbelt is not eligible if it is more than 1 hectare, and more than 30 per cent canopy cover at maturity, and more than 30 metres wide (ie, once it meets the NZ ETS criteria).	Pruning and maintenance of trees means the amount of carbon stored in the woody vegetation regularly changes.

Partnership's proposed categories	Description	Why we are not recognising these
<b>Woodlots and tree-lots</b>	Up to 1 hectare and at least 0.25 hectares of tree species that have greater than 30 per cent canopy cover.	Monitoring and verification of small areas carry relatively high administration costs and cost recovery by the regulator.
<b>Indigenous vegetation established on or after 1 January 2008 (unless evidence exists of establishment between 1990 and 2008)</b>	<p>At least 0.25 hectares of land wholly or predominantly in indigenous woody vegetation either planted, regenerated, or a combination, that was in pasture before 1 January 2008 (unless evidence exists of establishment between 1990 and 2008). For regenerating, a seed source needs to exist within 100 metres of the regenerating vegetation area. A declaration will be required stating that the land was not in vegetation before 1 January 1990.</p> <p>This vegetation was proposed to be rewarded at a higher rate, to reflect the full carbon stock change.</p>	<p>This category overlaps with the NZ ETS.</p> <p>This vegetation is still eligible for recognition through contractual payment for sequestration under <i>the management of indigenous vegetation</i> category. However, levy payers will only be rewarded for the carbon sequestration that arises from the active management of that vegetation.</p>



# Glossary

Key term	Definition
<b>Additionality</b>	Additionality arises from projects that have net emissions savings or sequestration benefits in excess of those that would have arisen anyway (ie, compared with a 'baseline'). Additional sequestration is defined as greenhouse gas emissions removals that are due to a specific intervention and would not have occurred under business as usual.
<b>Agricultural emissions</b>	Emissions from agricultural activities, such as crops and livestock, which release significant amounts of greenhouse gas emissions, particularly biogenic methane and nitrous oxide, both powerful greenhouse gases. These emissions account for almost half of Aotearoa New Zealand's greenhouse gas emissions. Methane and nitrous oxide are the two main agricultural greenhouse gases.
Long-lived gases	Long-lived gases include nitrous oxide and carbon dioxide. They can stay in the atmosphere for hundreds to thousands of years. These are included in the net-zero target set by the Government for 2050.
Short-lived gases	Short-lived gases include methane, which degrades in the atmosphere over decades. The target is to reduce biogenic methane emissions by 10 per cent by 2030, relative to 2017 levels, and 24 per cent to 47 per cent lower by 2050.
<b>Allocation</b>	An allocation of units that is given to a business carrying out an activity that is recognised as being affected by the New Zealand Emissions Trading Scheme.
<b>Climate</b>	<p>Informally, the average weather over a period ranging from months to thousands or millions of years. In more formal terms, a statistical description of the mean and variability of quantities, usually of surface variables, such as temperature, precipitation and wind, averaged over a period (typically 30 years, as defined by the World Meteorological Organization).</p> <p>More broadly, climate is the state, including a statistical description, of the climate system.</p>
<b>Climate change</b>	A change in the state of the climate that can be identified (eg, by using statistical tests) by changes or trends in the mean and/or variability of its properties, and that persists for an extended period, typically decades to centuries. Includes natural internal climate processes and external climate forcings, such as variations in solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. The United Nations Framework Convention on Climate Change (UNFCCC) definition of climate change specifically links it to direct or indirect human causes, as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". The UNFCCC thus makes a distinction between climate change attributable to human activities changing the atmospheric composition and climate variability attributable to natural causes.
<b>Climate Change Response Act 2002</b>	A legal framework to help enable Aotearoa New Zealand to meet its international climate change obligations under various international agreements, such as the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

Key term	Definition
<b>Cost recovery</b>	Cost recovery allocates costs to those who benefit from or generate the need for a service. In this context, it involves charging, where appropriate, those who create the need to develop and run this emissions pricing system. Cost recovery is assessed against the Government's four cost-recovery principles: transparency, justifiability, efficiency, equity.
<b>Crown (the)</b>	Generally, executive government conducted by ministers and their departments. The Crown does not normally include organisations with their own corporate identities, such as state-owned enterprises.
<b>Emissions</b>	In the context of climate change, emissions of greenhouse gases, precursors of greenhouse gases and aerosols caused by human activities. These activities include the burning of fossil fuels, deforestation, land use and land-use change, livestock production, fertilisation, waste management and industrial processes.
<b>Emissions budgets</b>	The Government has set a long-term target to reach net-zero greenhouse gas emissions by 2050. Aotearoa New Zealand is using a system of emissions budgets to meet the net-zero target. The Government has published the first three emissions budgets (2022–2025, 2026–2030, 2031–2035).
<b>Emissions factors</b>	Emissions factors are a statistical method to relate emissions generated to a particular activity. Emissions factors are representative values assigned to activities that result in emissions. For agriculture, this means different emissions factors are assigned to the activities around specific farming practices and animals, e.g., the raising of beef cattle. The Government is working on what emissions factors could be for a processor-level, split-gas pricing system.
<b>Emissions leakage</b>	Emissions leakage occurs when there is an increase in greenhouse gas emissions in one country as a result of an emissions reduction by a second country with a strict climate policy (eg, if a business were to transfer production to other countries with laxer emissions constraints).
<b>Equitable</b>	Equitable systems recognise that each group, individual, sector has different circumstances, resources and capabilities, and allocate the resources and opportunities needed to reach an equal outcome.
<b>Governance</b>	The governing architecture and processes of interaction and decision-making that exist in and between governments, economic and social institutions.  Governance permeates all aspects of Aotearoa New Zealand, from Te Tiriti o Waitangi partnership between Māori and the Crown, to the relationship between local government and communities, and from the economy to the built environment and to natural ecosystems.
<b>Greenhouse gases</b>	The atmospheric gases responsible for causing global warming and climate change. The major greenhouse gases are carbon dioxide, methane and nitrous oxide. Less prevalent, but very powerful, greenhouse gases are hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.
<b>Greenhouse Gas Inventory</b>	A list of emissions sources and the associated emissions quantified using standardised methods.

Key term	Definition
<b>Gross domestic product</b>	The sum of the gross value that all resident and non-resident producers in the economy added, at purchasers' prices, to a country or region plus any taxes and minus any subsidies not included in the value of the products in a country or a geographic region for a given period, normally one year. Gross domestic product is calculated without deducting for depreciation of fabricated assets or depletion and degradation of natural resources.
<b>Impacts</b>	The consequences of realised risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather events), exposure and vulnerability. They are generally effects on human lives, livelihoods, health and wellbeing; ecosystems and species; economic, social and cultural assets; services (including ecosystem services); and infrastructure. They can be harmful or beneficial. Also known as consequences or outcomes.
<b>Incentive payments</b>	By attaching value to approved mitigations, incentive payments encourage and reward farmers and growers who adopt mitigations to reduce their emissions. Proposed incentive payments can either be a deduction from farmers' and growers' emissions bills or a rebate for eligible mitigation actions they uptake on the farm.
<b>Indigenous forest</b>	Indigenous forest is a category of forest comprising tree species that are native to Aotearoa New Zealand.
<b>Land use</b>	All of the arrangements, activities and inputs (a set of human actions) that people undertake in a certain type of land cover (eg, forest land, cropland, grassland, wetland and settlements).  Alternatively, the social and economic purposes for which land is managed (eg, grazing, timber extraction, conservation and city dwelling).
<b>Leasing</b>	In agriculture, a land lease agreement is when rent is paid to the farm owner (lessor/landlord) for the use of land.
<b>Levy</b>	A levy is an amount of money that must be paid and that is collected by the Government or another authority.
Farm-level levy	A farm-level levy means that farmers and growers over a specified stock number threshold are required to report on and pay for their on-farm emissions annually.
Processor-level levy	A processor-level levy means that manufacturers and importers are required to report on and pay for emissions, based on the charge applied to products supplied, or bought (eg, fertiliser), by farmers or growers.
Split-gas levy	A split-gas levy creates different levy rates for short-lived (eg, biogenic methane) and long-lived (eg, nitrous oxide and carbon dioxide) gases. This approach reflects that methane is not required to reduce to net-zero in Aotearoa New Zealand's emissions targets.
<b>Māori agribusiness</b>	Māori agribusiness includes Māori farmers, growers, land owners, land managers and land users across Aotearoa New Zealand, including whānau, hapū and iwi land owners.
<b>Methane</b>	Methane is a short-lived greenhouse gas and can come from two different sources: biogenic methane and fossil methane.
Biogenic methane	Biogenic methane comes from plant and animal sources, including livestock, waste treatment and wetlands. In Aotearoa New Zealand, most of the methane emissions are from farmed livestock, such as sheep and cattle. These animals naturally produce methane as a by-product of their digestive process and release it into the air, primarily through burping.
<b>Milestones</b>	Milestones are set to mark progress towards a goal. Six implementation milestones have been set by the Government for the period 2020 and 2025. They were set to track the He Waka Eke Noa – Primary Sector Climate Action Partnership's progress towards its goal to develop an alternative system to the

Key term	Definition
	New Zealand Emissions Trading Scheme to reduce agricultural emissions. They are legislated through the Climate Change Response Act 2002.
<b>Mitigation measures</b>	Mitigation measures are efforts to reduce or prevent emissions of greenhouse gases. They can include the uptake of new technologies, increasing the efficiency of existing technologies, or changing management practices.
<b>Nationally Determined Contribution (NDC)</b>	Countries made NDC commitments to indicate their emissions targets under the Paris Agreement on Climate Change. An NDC represents the contributions determined by each country individually that it would make to reduce greenhouse gas emissions and adapt to the impacts of climate change.
<b>New Zealand Emissions Trading Scheme (NZ ETS)</b>	The NZ ETS is an emissions pricing scheme, Aotearoa New Zealand's main tool used for reducing emissions. Under this scheme, emitters must report and pay for their emissions. The NZ ETS was created through the Climate Change Response Act 2002, passed in recognition of Aotearoa New Zealand's obligations under the Kyoto Protocol.
<b>New Zealand Units (NZUs)</b>	An NZU represents 1 metric tonne of carbon dioxide equivalent and can cover both emissions and removals. It is the primary domestic unit of trade for emissions and it is issued by the Government.
<b>Ngā Whenua Rāhui</b>	A contestable Ministerial fund that exists to facilitate the voluntary protection of indigenous biodiversity on Māori-owned land while honouring the rights guaranteed to Māori land owners under Te Tiriti o Waitangi.
<b>Nitrous oxide</b>	Nitrous oxide is a long-lived gas that stays in the atmosphere for an average of 114 years. It is produced when nitrogen compounds in urine, manure and fertilisers are broken down by microbes in the soil and released into the atmosphere.
<b>Point of obligation</b>	The point of obligation is the entity that is required to report a defined set of information around its emissions and surrender emissions units.
<b>Processors</b>	Meat and milk processors, and importers and manufacturers of fertiliser.
<b>QEII covenants</b>	A legal agreement between QEII and a landowner to protect a special open space feature in perpetuity – it is entered into voluntarily by the landowner.
<b>Revenue recycling</b>	Under the proposed scheme, revenue recycling means using revenue from the levy to fund the uptake of emission mitigations technologies and practices.
<b>Sequestration (carbon sequestration)</b>	Carbon sequestration is the process of removing carbon dioxide from the atmosphere. For example, as plants grow, they absorb and store carbon through photosynthesis. Through this process, they reduce the total carbon concentrated in the atmosphere. This helps reduce Aotearoa New Zealand's net emissions.
<b>Sharemilking</b>	Sharemilking is when two parties come together to run a dairy operation: the person who owns the land and the sharemilker (the person who runs the farm and milks the cows). The sharemilker either milks a dairy farmer's cows for a share of the profits, or owns a herd of cows and milks them on an owner's land for a share of the profits.
<b>Wellbeing</b>	The health, happiness and prosperity of an individual or group. It can cover material wellbeing (eg, income and wealth, jobs and earnings, and housing), health (eg, health status and work-life balance), security (eg, personal security and environmental quality), social relations (eg, social connection, subjective wellbeing, cultural identity and education) and freedom of choice and action (eg, civic engagement and governance).

# Te reo Māori glossary

Te reo Māori	English
<b>Hapū</b>	Kinship group, clan, subtribe.
<b>Iwi</b>	Tribe, large group descended from a common ancestor.
<b>Mātauranga (Māori)</b>	Māori knowledge systems and worldviews, including traditional concepts.
<b>Māori</b>	Māori is used to mean people of Māori descent.
<b>Māori agribusiness</b>	Encompasses Māori farmers, growers, land owners, land managers and land users across Aotearoa New Zealand, including whānau, hapū and iwi land owners.
<b>Māori land or whenua Māori</b>	Māori land or whenua Māori is used to refer to land administered under Te Ture Whenua Māori Act 1993. Three types of whenua Māori recognise and record the connection between Māori land owners and their ancestral lands through whakapapa. Māori also own general title land for agricultural activities or other purposes, including titles transferred through Te Tiriti o Waitangi settlement processes: Māori freehold land, Māori customary land and general land owned by Māori.
<b>Tangata whenua</b>	The people of the land, local indigenous people. Māori are tangata whenua of the land they whakapapa back to.
<b>Te ao Māori</b>	The Māori world.
<b>Te taiao</b>	The environment.
<b>Tikanga</b>	Custom, practice, correct protocol – the customary system of values and practices that have developed over time and are deeply embedded in the social context.
<b>Te Tiriti o Waitangi (Te Tiriti)</b>	The Treaty of Waitangi. Note: while these terms are used interchangeably, the Government acknowledges that the English version and te reo Māori translation are separate documents and differ in several respects.
<b>Whakapapa</b>	Genealogy, genealogical table, lineage, descent.
<b>Whānau</b>	Family, extended family, family connection.

# List of acronyms and abbreviations

Acronym	Full name
CCRA	Climate Change Response Act 2002
CH <sub>4</sub>	Methane
Commission (the)	Climate Change Commission
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> -e	Carbon dioxide equivalent
ETS	Emissions trading scheme
GHG	Greenhouse gas
GST	Goods and services tax
IFP	Integrated Farm Planning
Interim Committee	Interim Climate Change Committee
IT	Information technology
kg	Kilograms
MU	Methane Units
Mt	Megatonnes
NDC	Nationally Determined Contributions
NDC1	First Nationally Determined Contribution
NZ ETS	New Zealand Emissions Trading Scheme
NZUs	New Zealand Units
OECD	Organisation for Economic Co-operation and Development
Partnership (the)	He Waka Eke Noa – Primary Sector Climate Action Partnership
t	Tonnes
UNFCCC	United Nations Framework Convention on Climate Change