# *Supplementary Analysis Report: Agricultural Emissions Pricing*

## Coversheet

| Purpose of Document | |
|---|---|
| Decision sought: | Agreement to legislate for an emissions pricing system on agricultural greenhouse gases as an alternative to the New Zealand Emissions Trading Scheme |
| Advising agencies: | Ministry for the Environment<br>Ministry for Primary Industries |
| Proposing Ministers: | Minister of Climate Change<br>Minister of Agriculture |
| Date finalised: | 21/08/2023 |

### Problem Definition

Aotearoa New Zealand needs to reduce its agricultural greenhouse gas emissions in order to meet our legislated targets, emissions budgets, and Nationally Determined Contribution, as well as to remain internationally competitive and environmentally sustainable producers of food and fibre.

The majority of our agricultural greenhouse gas emissions, including most of our national biogenic methane emissions, come from farmers of livestock, in particular sheep, beef, and dairy. However, the absence of a price for agricultural emissions means that pastoral farmers have limited financial incentives to reduce their emissions. They are likely to be producing more food and fibre, or to be producing with lower emissions efficiency, than would be the case if they faced the true cost of emissions. Pastoral farmers are also not incentivised to adopt practices and technologies that could reduce emissions.

Other producers of food products in Aotearoa New Zealand also contribute to our total greenhouse gas emissions, including methane emissions from minor animal and animal product sectors (deer, pigs, poultry, and eggs, etc.) as well as emissions associated with fertiliser used by growers (fruit, vegetables, crops), and likewise face limited financial incentives to reduce emissions.

### Executive Summary

The agriculture sector plays an important part in Aotearoa New Zealand's transition to a low-emissions, climate-resilient, high-wage future. Agricultural greenhouse gas emissions contribute to around 50 per cent of Aotearoa New Zealand's total emissions, including most of our nitrous oxide and biogenic methane emissions.

Aotearoa New Zealand has legislated targets to reduce:

- methane by 24–47 per cent by 2050 (compared to 2017 levels);
- methane by 10 per cent by 2030 (compared to 2017 levels); and,
- long-lived gases to net zero by 2050.

The Climate Change Response Act 2002 requires an agricultural emissions pricing system to be in place by 2025. To support this process, the Government partnered with the food and fibre sector bodies and the Federation of Māori Authorities (FOMA) through the He Waka Eke Noa – Primary Sector Climate Action Partnership (the Partnership). The Government also commissioned the Climate Change Commission (the Commission) to assess the Partnership's

recommendations, and farmer readiness for a pricing system by 2025, and advise on any assistance that should be provided to farmers and growers under an agricultural emissions pricing system.

Officials considered the Partnership's and Commission's recommendations and advice, and assessed the following options for pricing agricultural emissions:

- Option 1 – Processor-level Pricing in the NZ ETS;
- Option 2 – Basic Farm-level Levy (Official's preferred option);
- Option 3 – Partnership's Farm-level Levy;
- Option 4 – Farm-level Pricing in the NZ ETS;

Officials conclude that Option 2: Basic Farm-level Levy, which adapts the Partnership's design recommendations and incorporates feedback received through public consultation, is the preferred option. This is based on the three key criteria of effective, practical, and equitable. Sub-options were also considered for Option 2, but not preferred. Appendix Three provides a comparison of system elements across these four macro-options in addition to the explanations and assessments of individual options throughout the Supplementary Analysis Report (SAR).

A Cost-Benefit Analysis was also undertaken, comparing the long-term benefits of emissions reductions (and market premia from carbon-neutral products), with the costs of losses in net farm revenue as well as administrative and compliance costs. The comparison was across different processor and farm-level pricing systems and varying methane prices. There was also an assessment of the fiscal sustainability of the basic farm-level levy system under high and low mitigation technology uptake assumptions.

The analysis found that all options, except a farm-level levy at the lowest price, would have positive benefit–cost ratios, indicating that both processor and farm-level pricing systems all have positive impacts compared to not pricing agricultural emissions. Benefit–cost ratios were comparable across these options; with options that result in higher emission reductions having higher benefits, but at a cost of higher losses in net farm revenue.

Modelling indicated that the largest impacts of emissions pricing are expected to be lower production on sheep and beef farms, which have high emissions relative to production, and limited options to reduce emissions other than by lowering stock numbers. Dairy farms are also likely to reduce production in response to emissions pricing, but proportionately less; and other farming types (e.g. arable, horticulture) are projected to expand modestly as a result of land-use changes from pasture.

Direct impacts on farm production from emissions pricing may have significant flow-on effects, including upstream impacts on production from reduced farm inputs (e.g. agricultural contractors), and downstream effects if processors (e.g. meat works or dairy factories) have fewer products to process. There may be effects that offset these impacts associated with alternative land uses and the spending and employment associated with this.

Māori may be disproportionately affected because of the concentration of their assets in sheep and beef farming – it is estimated that Māori operate up to 25 per cent of Aotearoa New Zealand's sheep and beef farmland – as well as high levels of employment in industries related to agriculture, such as meat processing. It is important to work with Māori landowners to understand how we can manage these impacts, to support a transition to a low-emission, climate-resilient future.

The impacts of reduced agricultural production will be greatest in areas where farming is a large part of the local economy, especially in remote rural communities with few alternative employment opportunities. Potential mitigation measures may focus around two key themes: reducing the risk of widespread financial hardship; and, building rural skills and support systems, for instance through extension services and programmes.

The designs of these systems also include elements such as: how the price will be set; the governance arrangements of the pricing system; what actions farmers will be rewarded for; and how on-farm sequestration should be recognised. Following public consultation, the Minister of Climate Change and the Minister of Agriculture (collectively, the Ministers) released a joint report

in December 2022, outlining a preferred agricultural emissions pricing system. Final policy decisions on a pricing system will be made in 2023.

Appendix One includes a description and qualitative assessment of system elements that were not integrated into any of the final options presented in the main body of this document.

Appendix Two outlines options considered for rewarding on-farm sequestration.

Appendix Three provides additional comparison of system elements across the different options.

## Limitations and Constraints on Analysis

Much of the scope and scale of this analysis is determined by the history of this policy process and by legislated or Cabinet-mandated pathways.

Note that, in some places, rather than designing and assessing a range of discrete system elements under the preferred option (the basic farm-level levy), officials have taken negotiated positions and/or minimum viable products needed to meet implementation deadlines and worked to improve and streamline these for the best outcomes against our criteria.

This SAR was initially drafted as an interim document to support Cabinet decisions ahead of consultation, with the final version of the SAR integrating Ministerial decisions made in late 2022 and August 2023 and the feedback received over the consultation period.

This document ought to be read alongside the following reports for a comprehensive picture of the policy proposals:

- The Cabinet paper to which this SAR is appended;
- The discussion document, *Pricing Agricultural Emissions: Consultation document* (2022);
- The Ministers' subsequent report, *Pricing Agricultural Emissions: Report under section 215 of the CCRA* (2022); and
- More comprehensive detail on the feedback provided through the consultation process presented in *Pricing Agricultural Emissions: Summary of submissions* (2023).

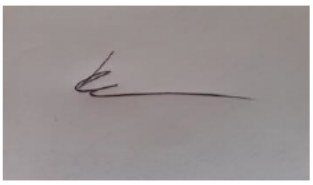
The analysis also draws on modelling of the impacts of pricing agricultural emissions on the agricultural sector undertaken by Manaaki Whenua – Landcare Research in various iterations over the course of 2022.

However, modelling of major 'shocks' such as introducing emissions pricing is inherently subject to high margins of error, and the figures quoted in this document should be treated with caution. Notwithstanding this, we consider the comparisons between different options yield realistic conclusions about relative impacts.

There is considerable uncertainty about the nature, scale, and location of impacts of changes in agricultural production on the wider economy, Māori, and rural communities. Therefore, any quantitative assessment of such impacts would be highly speculative, and we have limited our assessment to qualitative factors.

Overall, however, the modelling conducted has clearly demonstrated that all forms of pricing will have a significant impact, and that the level of price has a much greater effect on the results of any quantitative analysis than any system elements or settings that are present across the options presented. Many of the differences between options shown in the analysis represent restrictions on how prices could be set (e.g., in the NZ ETS at processor level, there would be less control and ability to start in a 'low price' scenario as in other options), and it is the subsequent variation in *price* not *architecture* that creates variation between outputs of modelling. At similar prices, the options have comparable outcomes in terms of absolute reductions achieved and aggregate socio-economic impacts.

Information received directly from submitters to the government's consultation process was largely qualitative, and even anecdotal, and was therefore unable to further refine the quantitative modelling. Instead, it predominantly reinforced the picture that we already had of the overall impacts that may be felt across the different parts of the agricultural sector. There is insufficient information available to determine the specific impacts of the different pricing options on Māori and rural communities. The information and analysis indicate that all of the pricing options will have an impact.

| Responsible Manager(s) (completed by relevant manager) | |
|---|---|
| *Kara Lok*<br>*Manager*<br>*Markets Development, Climate Change*<br>*Ministry for the Environment*<br>  <br>*23/08/2023* | *Fleur Francois*<br>*Manager*<br>*Climate Change On-Farm and Inventory*<br>*Ministry for Primary Industries*<br>  <br>*21/08/2023* |

| Quality Assurance (completed by QA panel) | |
|---|---|
| Reviewing Agencies: | Ministry for the Environment<br>Ministry for Primary Industries<br>The Treasury |
| Panel Assessment & Comment: | A quality assurance panel with members from the Treasury, the Ministry for Primary Industries and the Ministry for the Environment have reviewed the Supplementary Analysis Report (SAR). The panel considers that the SAR partially meets the quality assurance criteria.<br>The SAR provides mostly convincing and complete analysis of the different high-level options for pricing agricultural emissions. As noted in the limitation section, the SAR does not include analysis on the specific impacts of the different pricing options on Māori and rural communities beyond qualitative factors.<br>The SAR could have been strengthened by analysing in more detail the various system elements within the Government's preferred farm-based levy system, including what alternatives there are, and the trade-offs between decisions on system elements.<br>As noted in the limitations section, the emissions price set will have a significant impact on the ability of the system (under any option) to achieve its objectives. |

# Section 1: Diagnosing the policy problem

## What is the context behind the policy problem and how is the status quo expected to develop?

1. Aotearoa New Zealand needs to do its part in mitigating the worst effects of anthropogenic climate change, by reducing greenhouse gas (GHG) emissions across the economy.

2. This has been reflected in our legislated targets under the Climate Change Response Act 2002 (CCRA)[1], which include: reducing gross biogenic methane by 10% by 2030 from 2017 levels; reducing gross biogenic methane by 24–47% by 2050 from 2017 levels; and, reducing all other greenhouse gases to net zero by 2050.

3. As agriculture contributes around half of Aotearoa New Zealand's gross emissions, including 91% of our biogenic methane emissions and 94% of our nitrous oxide emissions, it is particularly important that significant reductions are achieved within the agricultural sector.

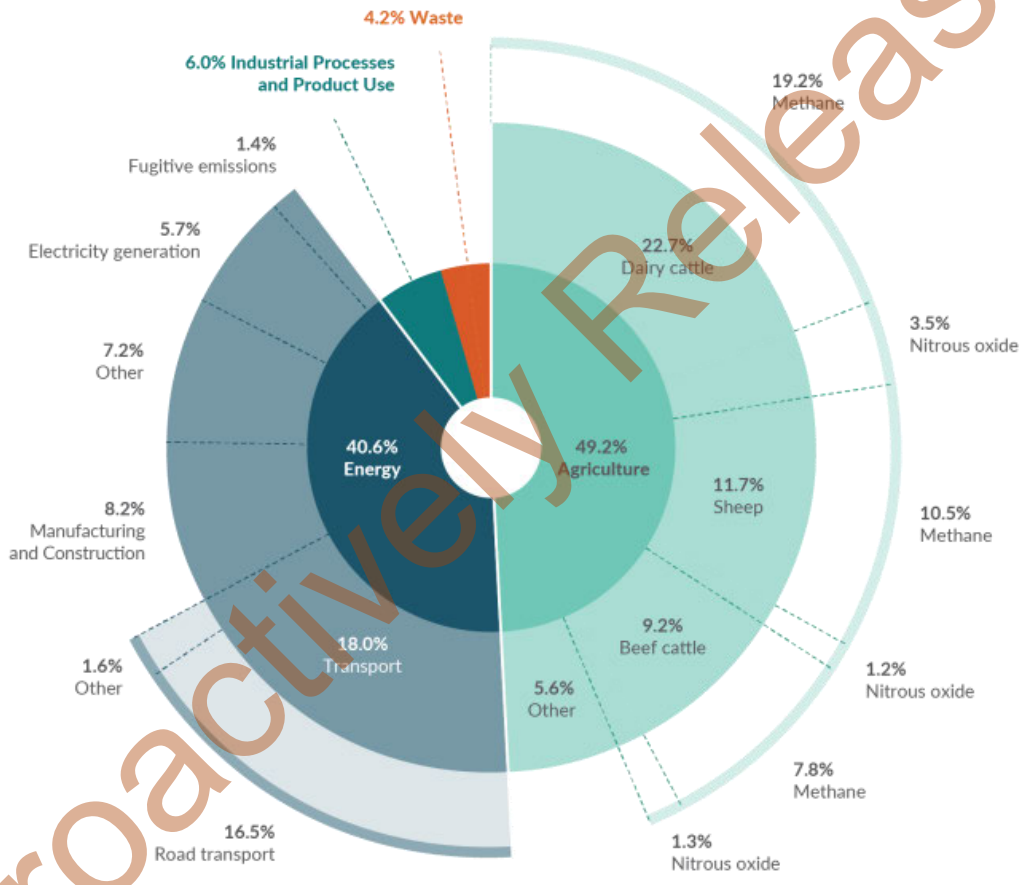



*Figure 1: Greenhouse gas emissions by sector, with agriculture making up about 50% of Aotearoa New Zealand's emissions profile*[2]

### Purpose of current round of policy development and consultation

4. The government previously consulted on the decision between an alternative emissions pricing system or the New Zealand Emission Trading Scheme (NZ ETS) backstop through the *Action on Agricultural Emissions* consultation process in 2019, so this is not a focus of this current round of policy development and consultation. Rather, the focus is on the design details for legislation and implementation of an alternative pricing system, in particular a

[1] www.legislation.govt.nz/act/public/2002/0040/latest/DLM158584.html

[2] https://environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-19902021-snapshot/

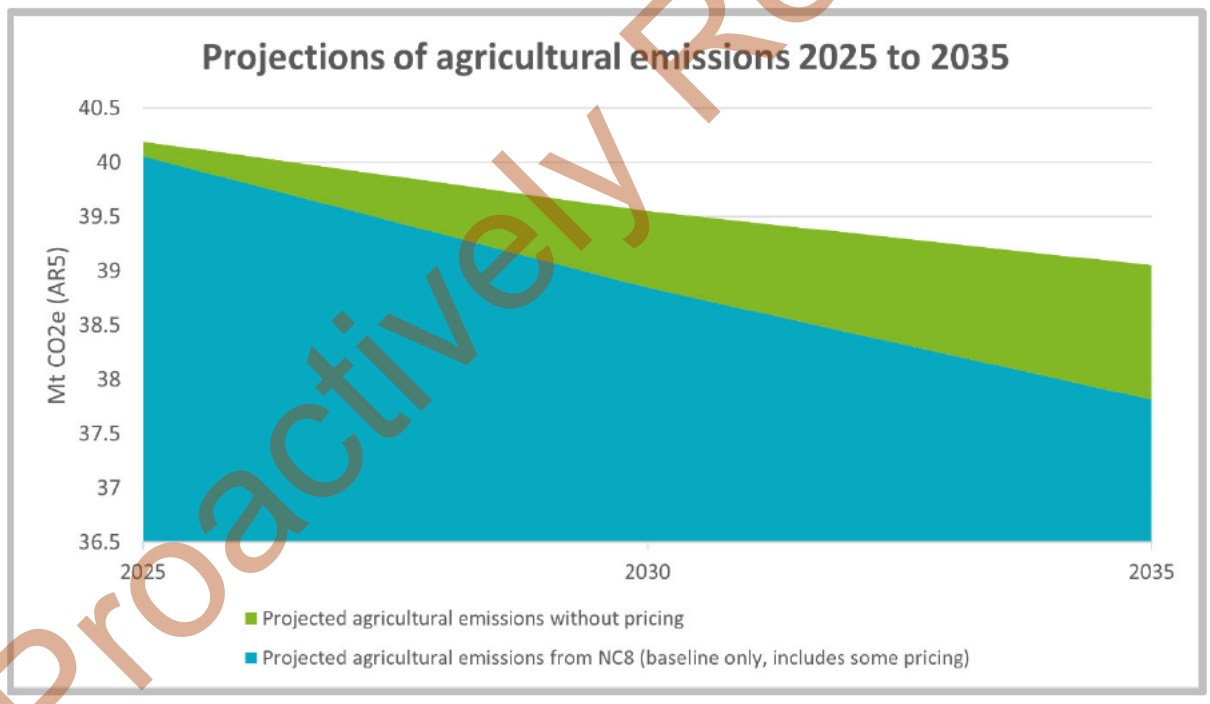
preferred option for a farm-level levy that builds on the advice of the He Waka Eke Noa – Primary Sector Climate Action Partnership (the Partnership) and the Climate Change Commission (the Commission). However, for completeness, this Supplementary Analysis Report also includes an assessment of a wider range of policy options than formed part of our *Pricing Agricultural Emissions* consultation in 2022.

5. It will also be important for the package of policy documents, including this SAR, to inform farmers and the wider public of what the entire pricing system could look like (not just the elements that sit in legislation). Details that are likely to sit in regulations or operations will be highlighted where relevant, even if they are not the core focus of this SAR.

### Detailed context and status quo

6. The primary instrument for reducing Aotearoa New Zealand's greenhouse gas emissions is the NZ ETS[3], through which most industries are required to pay a carbon price. Biological emissions from the agriculture sector do not face a price. Agricultural processors are already required to report under the NZ ETS, but do not have surrender obligations, meaning that there is no price on their emissions associated with their participation.

7. Agricultural emissions are projected to decrease over the period 2025 to 2035. Some form of pricing agricultural emissions (along with other measures) is expected to lead to greater reductions than without pricing (Figure 2).[4] **Error! Reference source not found.** Projections are from New Zealand's




8.

*Figure 2: Expected trajectory of agricultural greenhouse gas emissions to 2035*

9. Eighth National Communication (NC8) published in December 2022. Note that the 'with pricing' projected scenario included here does not reflect any of the options presented in this RIS, but a version of the NZ ETS backstop highly simplified for the modelling exercise.

[3] See Emissions Trading Scheme | EPA for a description of the NZ ETS.

[4] projections are from New Zealand's Eighth National Communication (NC8) published in December 2022. Note that the 'with pricing' projected scenario included here does not reflect any of the options presented in this RIS, but a version of the NZ ETS backstop highly simplified for the modelling exercise.

Furthermore, with pricing beginning in Q4 2025, emissions reductions will be slightly later than portrayed here. Figure 3 When compared to the three emission budget (EB) periods over this time period, none of the projected scenarios without farm-level pricing achieve sufficient reductions to meet the required budgets (Figure 3).

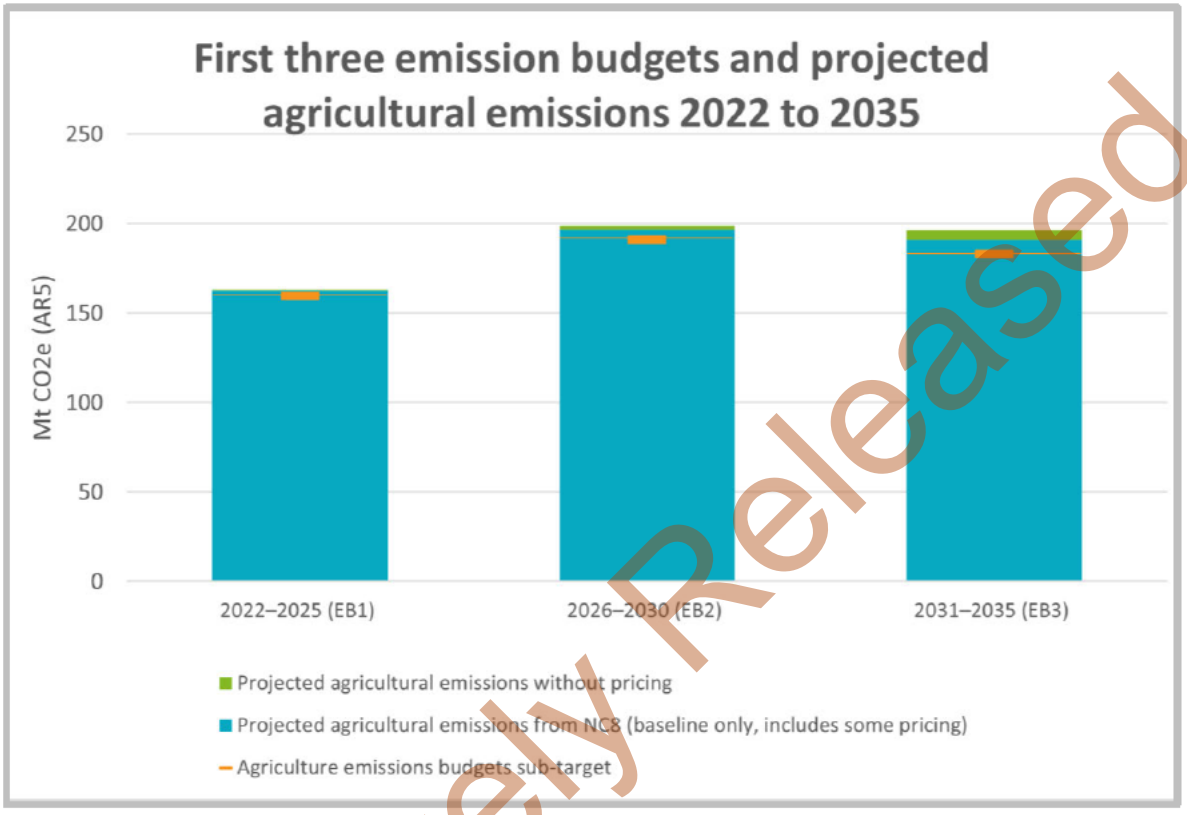



*Figure 3: Emissions Budgets 1–3 and projected agricultural emissions until 2035*

10. The analysis and options presented in this SAR builds on previous policy work and the legislated decision that there will be a system to price agricultural emissions by 2025, to which the previous and current government and the agricultural sector have committed. Agricultural emissions can either be priced through the NZ ETS or an alternative emissions pricing system.

11. The table below provides a high-level timeline of the policy processes underpinning these decisions and additional work supported by government to progress emissions pricing system options, most notably by the Partnership and the Commission.

| | |
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| **2019** | The Interim Climate Change Committee (ICCC) recommended agricultural emissions pricing.[5] |
| | The agricultural sector presented an alternative proposal entitled *He Waka Eke Noa: Our Future in Our Hands – Primary Sector Climate Change Commitment*.[6] |
| | Government held the *Action on Agricultural Emissions* consultation.[7] |
| | Government accepted the proposal to partner with the agricultural sector and iwi/Māori. |
| **2020** | The Climate Change Response (Emissions Trading Reform) Amendment Act 2020 committed to a system on agricultural emissions from no later than 2025, including:<br>• Milestones toward farmer readiness for emissions pricing, reviewed by the Commission (Schedule 5);<br>• 'Backstop' provisions to include agriculture in the NZ ETS if there is insufficient progress toward the milestones or a suitable alternative system (sections 220, 2A–2C, and various);<br>• Considerations for the Minister of Climate Change and the Minister of Agriculture[8] when making final decisions on how agricultural emissions would be priced; |
| | • A requirement for the Ministers to release a public report outlining the alternative agricultural emissions pricing system to the NZ ETS no later than 31 December 2022 (section 215). |
| | The Partnership[9] was established to, among other activities, carry out a co-design policy process for an agricultural emissions pricing system that would be effective in reducing agricultural emissions, implementable and workable for the farmers, growers, and industry bodies whom it would directly affect. |
| **2021** | The Partnership continues work on policy design and farmer engagement. |
| **2022** | The Partnership provided recommendations on an agricultural emissions pricing system:<br>• The Partnership developed policy recommendations on their preferred emissions pricing system as an alternative to the NZ ETS, including details for pricing and reporting of emissions and recognition of on-farm sequestration;<br>• The Partnership also began the work necessary to achieve the Schedule 5 milestones in the CCRA, and put in place a wider behaviour-change framework to support farmers and growers to transition to low-emissions agriculture;<br>• This report was delivered on 31 May 2022. It is referred to throughout the SAR as "the Partnership's Recommendations Report." |
| | The Commission provided advice to support Ministerial decisions,[10] including:<br>• 'What assistance, if any' should be provided to participants an emissions pricing system. This advice was requested by the Ministers under section 5K and 215 of the CCRA, and was delivered on 31 May 2022. It is referred to in this SAR as "the Commission's 5K Advice";<br>• An 'agricultural progress assessment' (APA) report of progress toward milestones in Schedule 5 of the CCRA. They also generally considered farmer readiness, proposed principles for agricultural emissions pricing system options, and an assessment of the Partnership's recommended option against the NZ ETS. This review was required by section 220 of the CCRA and delivered on 30 June 2022. It is referred to in this SAR as "the Commission's APA Report." |
| | Government consulted on proposed options for the pricing system, which built on the recommendations of the Partnership and the Commission, in response to which we received over 21,000 submissions.[11]<br>• The Ministers made public a report, as required in section 215 of the CCRA, outlining further details of the pricing system.[12] |
| **2023** | Further engagement has taken place with the Partnership to refine the government's preferred option for the pricing system. |

*Table 1: Timeline of recent policy processes from 2019 to 2023.*



5 climatecommission.govt.nz/our-work/advice-to-government-topic/interim-climate-change-committee-reports

6 dairynz.co.nz/media/5792241/primary-sector-climate-change-commitment-july-2019

7 environment.govt.nz/publications/action-on-agricultural-emissions-a-discussion-document-on-proposals-to-address-greenhouse-gas-emissions-from-agriculture

8 Hereafter, the Minister of Climate Change is referred to as 'the Minister,' and the Minister of Climate Change and Minister of Agriculture are collectively referred to as 'the Ministers.'

9 hewakaekenoa.nz/about

10 climatecommission.govt.nz/our-work/advice-to-government-topic/agricultural-emissions

11 Linked toward the end of the main consultation landing page: consult.environment.govt.nz/climate/agriculture-emissions-and-pricing

12 Linked at the top of the main consultation landing page: consult.environment.govt.nz/climate/agriculture-emissions-and-pricing


*Figure 4: Key recent reports underpinning the current policy process*

12. Within the context and decisions outlined above, this SAR assumes that emissions from agriculture will be priced in some form no later than Q4 2025 and includes pricing system options for Cabinet consideration. These formed the basis of the Government's 2022 consultation and will continue to inform the subsequent legislation process. The assessment that underpinned the decision to use a pricing system to reduce agricultural emissions is detailed in the 2019 RIS, *Reducing Greenhouse Gas Emissions from the Agriculture Sector*.[13]

13. Our policy proposals have significant interdependencies with a number of other climate and environment interventions, including:

    a. Emissions budgets, the Emissions Reduction Plan, and Aotearoa New Zealand's Nationally Determined Contribution (NDC);

    b. The NZ ETS and other emissions pricing and incentives schemes (e.g. forestry policy, the Synthetic Greenhouse Gas Levy);

    c. Freshwater Farm Plans and Integrated Farm Planning;

    d. Resource Management reforms (both overarching reforms, and specific changes relating to the consideration of climate change by local government);

    e. Wider rural/agricultural policy, including sector and government initiatives (e.g. the National Policy Statement for Indigenous Biodiversity, Crown Pastoral Land and state-owned farming enterprises, Fit for a Better World roadmap).

14. Specific interactions with or impacts related to these interdependencies are discussed throughout this document. In particular, we need to ensure that processors and farmers are not faced with unnecessary duplication of effort and costs, or conflicting incentives, as a result of inconsistencies between different systems.

### Māori economy, climate change, and the primary sector

15. Māori play a significant role in the primary sector. Māori own an estimated 1.51 million hectares of land, across approximately 28,000 blocks, either under private ownership or as registered Māori land owned by Māori authorities, enterprises, and individuals. Māori landowners have a substantial primary sector asset base including: $8.6 billion in sheep and

[13] environment.govt.nz/publications/reducing-greenhouse-gas-emissions-from-the-agriculture-sector

beef farming; $4.9 billion in dairy farming; and $2.6 billion in other agriculture (including horticulture). 19,170 Māori are employed across these sectors.

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

17. It is important to work with Māori landowners to understand mitigation options that are feasible on Māori land, to enable a transition to a low-emission and climate-resilient future, as well as to recognise the value of mitigations found in mātauranga Māori and local/regional practices.

18. We have heard consistently that mitigating and adapting to climate change are significant priorities for Māori, alongside being recognised for the actions they take on farm. Through engagement on agricultural emissions pricing since 2019, Māori have strongly expressed the importance of the Crown prioritising and upholding the principles of the Treaty of Waitangi / Te Tiriti o Waitangi (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 landowners to participate in a pricing system.

19. The Government has heard from recent engagement that the Crown must do more to uphold Te Tiriti. Concerns were raised about the consultation approach, including a desire for changes to the pricing system to address historical disadvantages and manage disproportionate impacts on Māori and Māori communities. Key areas of concern were raised during consultation and the specific policy solutions to help mitigate the impacts are covered below:

    a. Sequestration – Māori submitters emphasized the importance of recognising a wide range of carbon sequestration in vegetation, particularly that existing prior to 1990, in the pricing system. Sequestration is considered to play a key role in helping Māori reduce their emissions levy, is important for equity reasons and recognises their role as kaitiaki.

    b. Transitional assistance – Submissions raised concerns around the lack of assistance to support the transition due to a lack of access to support systems, complicated land management structures, mitigation practices, tools or technologies that take a whole-of-whenua approach (Kotahitanga) towards land development (mana tangata) and environmental sustainability (kaitiakitanga). A specific ring-fenced fund from levy revenue to support Māori will be created. Māori representation on the System Oversight Board (proposed to advise Ministers on strategy and settings for the pricing system) will assist in identifying any further measures required to mitigate the impact on Māori.

    c. Governance and revenue recycling – Māori submitters expressed a desire to have a true partnership with government, and for Māori to make decisions for Māori. Government will collaborate with Māori to ensure the structure of advisory roles is developed in a way that is fit for purpose and future-proofed, including how Māori representation is reflected with the System Oversight Board.

    d. Point of obligation – Some submissions considered that a landowner point of obligation is preferential as only allowing the business owner to be recognised for sequestration will disadvantage Māori and has the potential to denigrate the mana of whenua Māori. Ensuring Māori can report collectively will address some of these concerns.

    e. Collectives – Submissions from Māori supported the use of collectives. Government will enable Māori and all participants to collectively report on their emissions and sequestration in 2025.

20. Māori agribusinesses also provided input within the Partnership, through the Te Aukaha work stream led by the Federation of Māori Authorities (FOMA). We note, however, that FOMA do not represent all Māori, or even all Māori agribusiness interests.

21. In addition, under Te Tiriti, the Crown has obligations to Māori when making decisions, including to:

    a. Identify the interests of affected Māori;

    b. Identify the likely impact of the proposal/decision on affected Māori; and

    c. Demonstrate active steps being taken, or that it intends to take, to protect the affected interest.

### Consultation process and next steps

22. More detail on the context of this policy process can be found in the discussion document (*Pricing Agricultural Emissions: Consultation document*, 2022), which was developed in parallel with the interim RIS, and the Ministerial report required in legislation by the end of 2022 (*Pricing Agricultural Emissions: Report under section 215 of the CCRA*, 2022).

23. Public consultation on the proposed agricultural emissions pricing system ran for six weeks between 11 October 2022 and 18 November 2022.

24. Feedback from consultation and engagement on the *Pricing Agricultural Emissions* discussion document with Māori, the agriculture sector, and the public has informed further design work of the proposed agricultural emissions pricing system.

25. Officials from the Ministry for the Environment (MfE) and the Ministry for Primary Industries (MPI) held 28 online and in-person events across the consultation period and received over 21,000 submissions on the proposal.

26. A summary of submissions (*Pricing agricultural emissions: Summary of submissions*, 2023) has been prepared and will accompany this document to Cabinet, detailing the numbers of submissions received in various forms, and the feedback received across each element of the proposed policy options. This summary will be publicly released in the coming months.

27. The major themes from submissions are summarised below*:*

    a. Most submitters commented on the departure of the government's proposal from the proposal put forward by the Partnership, and advocated for adoption or closer alignment with the Partnership proposal.

    b. Some non-sector submitters considered the proposals an inequitable subsidy for the agricultural sector. Most sector submitters expressed concern the proposals would threaten the viability of rural communities. Many Māori submitters considered that Māori would be disproportionately impacted and shared concerns about the negative impact on rual communities and people's mental health.

    c. Submitters views were polarised on governance and implementation. Most sector submitters opposed the government's modifications, while most Māori submitters considered the government had not sufficiently engaged with Māori and most non-sector submitters argued the pricing system was long overdue and advocated for iwi and Māori playing a larger role in governing the pricing system.

    d. Submitters views were highly polarised on the approach to setting levy rates. Sector submitters overwhelmingly opposed the the government's proposed approach and most non-sector submitters either supported the government's proposal or argued it did not go far enough. Most Māori submitters were concerned the levy rates would

disadvantage Māori landowners as well as lower-socioeconomic and rural Māori communities.

e. Most submitters opposed the government's modifications to the Partnership proposal for recognising on-farm sequestration. They argued it was inequitable for farmers to be charged for their emissions while the full range of sequestration on-farm was not recognised. Most Māori submitters argued that recognising sequestration from only limited types of vegetation was inequitable and would unfairly disadvantage Māori.

f. There was support from most submitters for a single centralised emissions calculator, farm level pricing of fertilser emissions, and transitional suppport, while the response to adopting an interim processor level levy was mixed.

28. The Ministers' section 215 report on an alternative agricultural emissions pricing system to the NZ ETS, informed by the emerging themes from submissions and broader consultation feedback, was published in December 2022. Following this, Cabinet agreed in August 2023 to make final decisions on the establishment and implementation of a farm-level, split-gas levy system for agricultural emissions with mandatory reporting beginning in Q4 2024 and pricing beginning in Q4 2025 [CAB-23-MIN-0370 refers]. Cabinet invited the Minister of Agriculture and the Minister of Climate to deliver a detailed Cabinet paper on a farm-level pricing system, as indicated in the December 2022 section 215 report before the 2023 General Election. This SAR provides analysis and support for that detailed Cabinet paper.

29. The proposed farm-level pricing system based on what was outlined in the section 215 report and the preferred option identified in the SAR has the following features:

a. A farm-level split-gas levy for agricultural emissions that would price emissions from biogenic methane and long-lived gases (nitrous oxide and carbon dioxide) separately;

b. Mandatory reporting of farm emissions starting in Quarter Four (Q4) 2024 of the calendar year;

c. Farmers and growers will be priced on their farm's emissions and recognised and rewarded approved mitigation technology used from Q4 2025 of the calendar year;

d. The legal point of responsibility for reporting and paying for emissions would be IR-registered businesses who meet one or more of the emissions thresholds (equivalent to ~200 tonnes $CO_2$-e per year);

e. Reporting could be done at either the individual farm level or via a collective;

f. Relatively low, unique prices would be set initially for both biogenic methane and long-lived gases for two years, based on set criteria;

g. On-farm sequestration would be recognised in an interim system in the event the innovation pathway (more details in Appendix Two) is not in place when the levy system comes into effect;

h. Revenue raised from the levy would be recycled back in the system, in line with a strategy outlining spending priorities to mitigate agricultural emissions and operate the system. The strategy would include operating costs, incentive and sequestration payments, and a dedicated fund for Māori landowners;

i. Advice on various elements of the pricing system and its settings would include the Commission and a non-statutory System Oversight Board, which will have representation from the agriculture sector and Māori;

j. Implementation of the pricing system would involve the Ministry for Primary Industries, Ministry for the Environment, and the Inland Revenue Department;

k. Information requirements would be detailed in primary legislation and regulations;

## What is the policy problem or opportunity?

30. Aotearoa New Zealand needs to reduce its agricultural greenhouse gas emissions in order to meet our legislated targets, emissions budgets, and NDC, as well as to remain internationally competitive and environmentally sustainable producers of food and fibre.

31. However, the absence of a price for agricultural emissions means that farmers and growers have limited financial incentives to reduce their emissions. They are likely to be producing more food and fibre than would be the case if they faced the true cost of emissions (and other less emissions-intensive types of agriculture such as fruit, vegetables, and crops will produce less). Farmers and growers would not be incentivised to adopt practices and technologies that could reduce emissions.

32. The 2019 RIS on reducing emissions from the agriculture sector established the following problem definition and opportunity, from which the decision was made to price agricultural emissions:

**Problem Definition**

*Reducing Greenhouse Gas Emissions from the Agriculture Sector*, 2019 (summarised)

Urgent transformational economy-wide action is needed in New Zealand as part of the global response to the challenge of constraining climate change. Further reductions in agricultural emissions of methane and nitrous oxide are required to meet New Zealand's domestic and international targets for 2030 and 2050.

The burden of making the necessary low-emissions transition also needs to be distributed efficiently and equitably across the economy. Other emissions (from energy, waste, and industrial processes) are already priced through the NZ ETS and only agricultural emissions are not priced.

Government intervention is necessary to deliver the emissions reductions required because the status quo does not provide sufficient incentive for the uptake of emissions-reducing practices and technologies across the agriculture sector.

An ideal policy mix would build the capacity and capability to find new and better ways to further reduce the biological emissions from agriculture over time, consistent with maintaining a profitable agricultural sector within a productive, sustainable, and inclusive economy.

*Box 1: Problem definition outlining the need to reduce agricultural emissions from the 2019 RIS.*

33. The CCRA requires some form of system to price agricultural greenhouse gas emissions to be in place by 2025, even if full farm-level pricing is delayed:

a. If no suitable alternative emissions pricing system can be implemented by 2025, or if farmers are not ready to participate in this system, then the CCRA includes provisions to place NZ ETS surrender obligations on agricultural processors.

b. While this would need to be operationalised and conflicting provisions would need to be removed by Order in Council, from a legislative perspective the NZ ETS 'backstop' is automatic.

34. The policy opportunity is to ensure that the system chosen to price agricultural emissions is effective at reducing emissions in line with Aotearoa New Zealand's emission reduction targets and supports a viable agricultural sector. This includes the opportunity to either develop an alternative to the NZ ETS for pricing agricultural emissions, or to incorporate processors and/or farmers into the NZ ETS (which could include tweaking how they would interact by default under legislation and creating additional policy to support participation in the NZ ETS).

35. The opportunities, costs, and risks of putting agricultural processors and/or farmers in the NZ ETS are considered in Section 2, along with non-NZ ETS farm-level or processor-level options, and fertiliser-only NZ ETS.

36. Any of the options for pricing agricultural emissions, once implemented, will have significant distributional impacts, especially on the agricultural sector. Distributional impacts are therefore a key element of our assessment framework employed throughout this SAR and are addressed where relevant in later sections.

## What objectives are sought in relation to the policy problem?

37. Our objectives in addressing this policy problem build on decision-making frameworks and factors for consideration from several places:

    a. Legislated milestones and requirements, primarily those in section 215 and Schedule 5 of the CCRA;

    c. The Climate Change Response (Zero Carbon) Amendment Act 2019 sets out Aotearoa New Zealand's domestic emissions reduction target framework, including the separate biogenic methane targets for 2030 (10% reduction) and 2050 (24–47% reduction), as well as the net-zero target for all other gases by 2050;

    d. Aotearoa New Zealand is using a system of emissions budgets to meet our 2050 target. The Government published the first three emissions budgets (2022–2025, 290 Mt $CO_2$-e; 2026–2030, 305 Mt $CO_2$-e; 2031–2035, 240 Mt $CO_2$-e) in May 2022. The emissions reduction plan setting out policies and strategies for meeting emissions budgets was published on 16 May 2022;

    e. Aotearoa New Zealand also has international obligations, in particular our NDC;

    f. Objectives and outcomes agreed in collaboration by the Partnership, including with government Partners, as well as the principles recommended by the Commission for general assessment of agricultural emissions pricing.

38. Officials have summarised these into three overarching objectives, presented in Box 2: Objectives for agricultural emissions pricing system below:

| ***Policy Objectives*** | |
|---|---|
| (1) | The agricultural emissions pricing system should be **Effective**, in generating incentives that will result in meaningful reductions in emissions that contribute to meeting Aotearoa New Zealand's targets.<br>*While agriculture is not expected to achieve the 2030 target alone, agricultural emissions should be reduced to contribute to the gross reductions in biogenic methane of 10% from 2017 levels required to meet this target.* |
| (2) | The agricultural emissions pricing system should be **Practical**, in that it can be implemented within statutory timeframes and established, operated, and modified in a cost-effective manner. |
| (3) | The agricultural emissions pricing system should be **Equitable**, within the agricultural sector, between it and other industries; and in terms of its impact on Māori agribusiness and broader iwi/Māori aspirations. |

*Box 2: Objectives for agricultural emissions pricing system*

39. The criteria outlined in the following section (see Table 4) expand on and define these objectives against which we assess the set of options. This includes by identifying specific metrics against which the more subjective elements of the objectives (e.g., equity) are assessed.

# Section 2: Deciding upon an option to address the policy problem

## What criteria will be used to compare options to the status quo?

40. The following table outlines the criteria from the decision-making framework built by officials.

41. Officials have also endeavoured to reflect the principles for assessing agricultural emissions pricing proposed by the Commission in the detail of these criteria. These are described in full in the Commission's APA review.

| Objectives | Detailed Criteria | Key Trade-offs |
|---|---|---|
| **(1) Effective** | (a) at reducing emissions in line with domestic and international climate change targets and the emissions budgets | The simplest way to achieve emissions reductions is through cuts in pastoral farm production; however, major reductions in production could have significant negative impacts on associated industries (suppliers, processors), farming regions and some rural communities.<br>The data and verification required to recognise specific on-farm technologies and practices is complex and costly, reducing the ability to streamline the system to keep it practical. |
| | (b) by recognising and incentivising the uptake of farm management, system, and land-use changes that result in emissions reductions | |
| | (c) by having independent, robust, and transparent policy setting and adjustment processes | |
| **(2) Practical** | (a) by being simple and easy to understand and participate in | As the system is made more simple and low cost, fewer reductions and mitigations that can be incentivised, and fewer levers are available to ensure equity, as the price becomes a blunt signal. |
| | (b) by being as low cost as possible to implement, audit, and verify | |
| | (c) by being adaptable, enabling changes to be incorporated over time | Incorporating changes over time and aligning with other systems both introduce complexity, creating a trade-off within this group of criteria. |
| | (d) by being actively aligned with other related climate and environmental systems | |
| **(3) Equitable** | (a) among agriculture sub-sectors, by minimising disproportionate losses in production and economic impacts | Treating the agriculture sector equitably with the rest of the economy would require a high price on all emissions as soon as possible, in line with NZ ETS settings.<br>However, to support effective transition and minimise undue disruption (including to livelihoods and wellbeing, as well as production) within the agriculture sector, and for Māori, a more gradual transition will be important. |
| | (b) between agriculture and other sectors / the wider economy | |
| | (c) by supporting Māori agribusinesses and broader iwi and Māori aspirations | |

*Table 2: Criteria for assessment of agricultural emissions pricing system options*

42. Assessment against these criteria will use a scoring system with a tick (or double tick), neutral, or cross (or double cross) to show whether each pricing system scores as

exceeding/meeting the criterion, neutral against/partially meeting the criterion, or not meeting/failing by a significant margin to meet the criterion.

## What scope will options be considered within?

43. Much of the scope and scale of this policy is determined by the history of this policy process and by the legislated or Cabinet-mandated pathways. In summary, the options analysed here fall within the following constraints:

    a. The form of policy intervention is an economic instrument (pricing system), which applies to the producer (whether farmer or processor) not the consumer;

    b. Agricultural emissions in this context refer to biological emissions from agricultural activities, including any methane, nitrous oxide, and carbon dioxide[14] from livestock and fertiliser use, but not including emissions such as transport, electricity, industrial heat processing, etc.;

    c. A backstop through the NZ ETS could come into effect prior to 2025 (if recommended by the Minister), and will come into effect from 2025 if no other system is put in place or it is determined by Ministers that farmers are not ready to comply with farm-level pricing;

    d. No system considered places the full 'market' price on agricultural emissions, as the NZ ETS options include a 95% free allocation as provided for in legislation, and the pricing scenarios explored under the alternative pricing systems are all well below expected NZ ETS prices – noting that some sectors in the NZ ETS also receive free allocation, and early years of the NZ ETS included other discounting mechanisms to support transition;

    e. Final policy decisions to implement the pricing system will be made in 2023.

44. In addition, Ministers must consider a range of independent advice (as outlined in Section 1) that they have received. Some of this advice forms a legislated part of this policy process (i.e., the Commission's advice on assistance), and other pieces have significant public and sector expectations to be considered (i.e. the Commission's advice on progress, and the Partnership's advice).

## What options are being considered?

45. The range of options draws on the pathways already set out in the CCRA, the recommendations of the Partnership, and further advice and analysis by the Commission and officials. The Partnership explored a greater range of options in their final recommendations throughout their policy design process. A summary of their policy design and assessment process can be found in the Partnership's 2022 recommendations report.

46. Officials considered a range of approaches to effectively and feasibly implement agricultural emissions pricing from 2025, including whether to directly implement farm-level pricing or begin by pricing processors as a transitional step, and with varying levels of complexity introduced from day one or over time.

47. Due to constraints around the time required to legislate and implement, and outstanding policy design concerns, the government has identified that it will be necessary to implement a 'minimum viable product' system to meet the 2025 deadline. Most options considered by this SAR include simplifications in the short to medium term with the intention of incorporating more comprehensive elements in the future.

[14] The call on whether carbon dioxide will or will not be included within the system from 2025 will be made by Cabinet.

48. The set of options assessed here include, with a more explicit breakdown comparing sub-elements included as Appendix Three:

| |
|---|
| **Option 1** – Processor-level Pricing in the NZ ETS<br>This is the option known as our 'backstop,' which could come into effect from 2025. |
| **Option 2** – Basic Farm-level Levy (Government Proposal)<br>This is officials' version of a simple farm-level pricing adapted from the Partnership's 2022 recommendations, consultation feedback, and further engagement with the sector, with enhancements to be incorporated over time. The implementation pathways for this option include:<br>**2A** – Direct implementation at the farm-level if the system is ready to come into effect and farmers are ready to participate; or,<br>**2B** – Triggering an interim processor-level levy that begins pricing emissions at this level for a short period of time, until farm-level obligations are possible.<br>**2C** – Consideration has also been given to pricing fertiliser via processors in the NZ ETS, while livestock emissions are priced through a Basic Farm-level Levy.<br>Option 2A is the core model on which the government publicly consulted and has since modified based on submitter feedback and further negotiations with the Partnership. The final version of this option is expanded in greater detail in the section on "*What option is likely to best address the problem…*", including optionality and/or decisions made on sub-options and system elements for Cabinet's approval. |
| **Option 3** – Partnership's Farm-level Levy<br>This is the Partnership's recommended transitional option to a more comprehensive system unmodified by officials. |
| **Option 4** – Farm-level Pricing in the NZ ETS<br>This is comprehensive farm-level pricing as already provided for in the CCRA, either transitioned to from the backstop or directly implemented in 2025. |
| **Other system design elements**<br>Significant design work was carried out on other key system elements, such as assistance to participants, which is also reflected in this section.<br>These elements are described and assessed in Appendix 1. |

*Table 3: Four options (and sub-options) for agricultural emissions pricing*

49. The baseline scenario is no pricing of agricultural emissions, with business-as-usual levels of output and emissions out to 2025 and 2030. This baseline is intended to provide a robust and consistent basis from which to assess and compare impacts of different options. This means that we are treating the absence of emissions pricing as the status quo, rather than any of the pricing options as a counterfactual.

50. However, Option 1: Processor-level Pricing in the NZ ETS is the 'backstop' option that will come into effect if no other option is agreed, unless it is repealed prior. Therefore, the 'no pricing' status quo is not considered a valid outcome of this policy process. Note that implementing Option 1 would nevertheless require Government decisions about expenditure (to establish appropriate systems within the NZ ETS) and development of regulations.

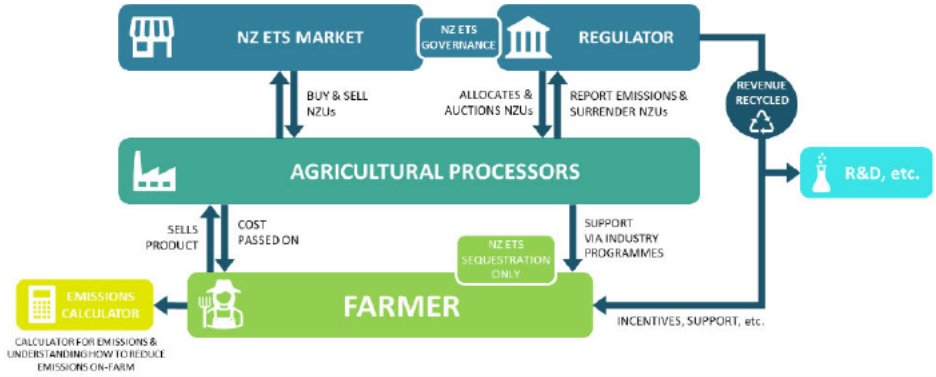
51. Detailed descriptions of options and the assessment of each are on the following pages.

**Note on interpretation of emissions reduction figures**

- The following tables present emissions reduction figures as percentages to quantify each option's estimated effectiveness for total GHGs, and for biogenic methane and nitrous oxide separately.
- The model used by Manaaki Whenua – Landcare Research was built on a baseline of 2020 emissions and land uses, and projects a 'business-as-usual' scenario out to 2030 (2030 BAU); the results of the modelling are compared with the 2030 BAU scenario.
- Aotearoa New Zealand's target for 2030 is for a gross reduction in biogenic methane of 10% from 2017 levels. Therefore, the percentage reductions against the 2030 BAU scenario are not comparable to the figures presented in our targets.
- For a conversion of these results as a comparison against the legislated target, see the 2022 discussion document.

*Box 3: Emissions reduction percentages in this SAR are against a 2030 BAU*

## Option 1: Processor-level Pricing in NZ ETS




This is the 'backstop' option that already exists in legislation should insufficient progress be made toward farm-level emissions pricing. It draws on existing provisions to rapidly enable processors to participate in the NZ ETS but would also include enhancements to incentivise reductions on-farm.

| | |
|---|---|
| *System* | NZ ETS. |
| *When would it start* | 01 January 2025. |
| *Point of obligation* | Processors (milk & meat).<br>Importers/manufacturers (fertiliser). |
| *Emissions calculation* | Through existing NZ ETS reporting – based on emissions associated with livestock products, or with fertiliser sold. |
| *Emissions price* | NZU surrender obligations for all gases in line with other NZ ETS participants. |
| *Reduction incentives* | Cost of emissions passed onto farmers, incentivising lower production.<br>On-farm incentive regime that pays for mitigations and technology uptake. |
| *Financial assistance* | 95% free allocation (output-based) as prescribed in legislation. |
| *Sequestration* | Primary channel is NZ ETS forestry, with investigation into improving access for agriculture. |
| *Revenue recycling* | Goes into the general pool of revenue raised from the NZ ETS, but agriculture is then eligible for recycled revenue out of this pool. |
| *Governance* | Uses existing NZ ETS governance structures. |
| *Transitional options* | Long-term transition to NZ ETS at the farm-level if feasible and worthwhile. |

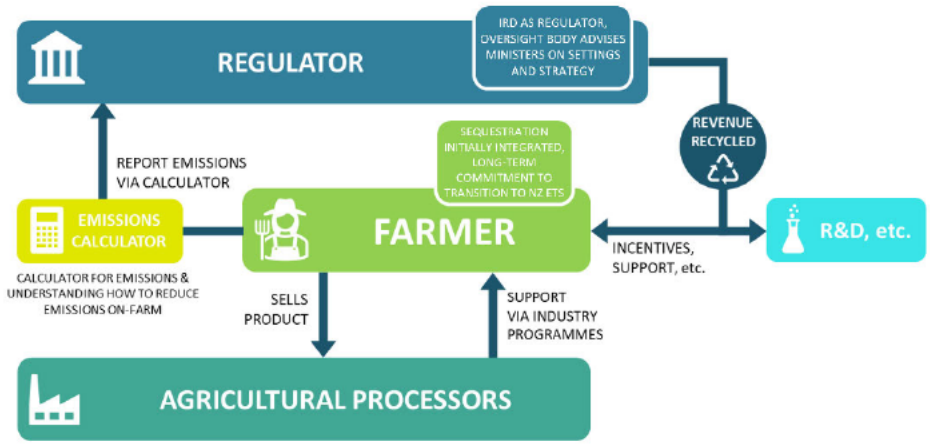
### Qualitative Assessment of Option 1

| | |
|---|---|
| *Effective* | This option is expected to more than achieve the targets through a combination of sheep and beef farms reducing production and stock, and any revenue recycled to agriculture from the general NZ ETS funds.<br>Modelling results indicate that this option could achieve significant reductions, up to –15.7% in all gases (–16.7% methane, –12.6% nitrous oxide) below the baseline scenario in 2030. This and other results used a price of $108.62/tCO$_2$-e for all gases discounted by 90% ($10.87/tCO$_2$-e).<br>However, the flat price at the processor-level appears to incentivise greater reductions in stock and production than one with separate prices for carbon and methane; increases the risk of emissions leakage[15] and does not directly recognise or incentivise on-farm mitigation, (which would rely instead on incentive payments).<br>By operation through the NZ ETS, the policy-setting and adjustment processes are independent, robust, and transparent. |

[15] Emissions generated outside New Zealand from food production to replace production losses in this country.

| | |
|---|---|
| *Practical* | This is the most practical of all the options as it is simplest to set up because primary legislation and the reporting system are already in place. Therefore, costs are relatively low ($3m to set up, $10m pa to operate).<br>Can be adapted over time, though selecting this option would likely set a clear direction for pricing to continue via the NZ ETS.<br>Aligns well with existing NZ ETS policy, including forestry, but will be more complex to align with farm planning. |
| *Equitable* | High costs concentrated on sheep and beef farms.<br>It is equitable with other sectors because of common inclusion in the NZ ETS, but the 95% discount in 2025 limits the benefits of this.<br>This option also limits Māori agribusinesses from making decisions and being recognised for actions on their farm. A blunt price passed down from the processor is also likely to not consider disproportionate disadvantages faced by Māori agribusinesses, as their specific on-farm circumstances cannot be differentiated from other farming operations; however, this can be alleviated by recycled revenue being used to support Māori agribusinesses. |
| *Additional comments* | This option is considered implementable in 2025.<br>This option had very little buy-in from farmers, the sector, and Māori, in particular because it diverges significantly from the Partnership's proposals.<br>A number of primarily non-sector submitters supported this option for the greater certainty and ambition that it provides for steep emissions reductions. |

## Option 2A: Basic Farm-level Levy (implemented in 2025)




This option begins agricultural emissions pricing with farmers directly and is delivered through a simple levy system. It includes rewards to incentivise reductions on-farm and would incorporate further enhancements over time.

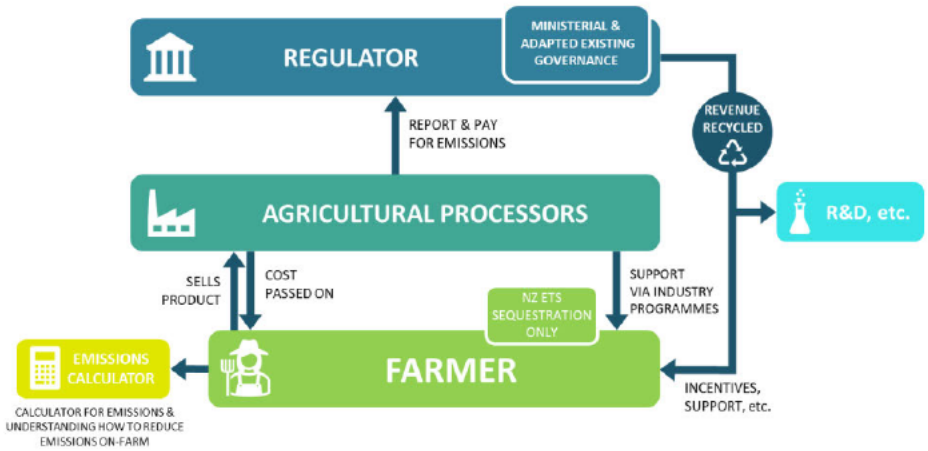
Officials have built this option on the basis of the Partnership's recommendations (see Option 3), as well as incorporating consultation feedback.

| | |
|---|---|
| *System* | Alternative pricing system. |
| *When would it start* | During quarter 4 of 2025. |
| *Point of obligation* | Farmers and growers (business owner). |
| *Emissions calculation* | Using a simple calculator that uses a range of data points to directly estimate on-farm emissions. |
| *Emissions price* | Unique price for both biogenic methane and long-lived gases set with primary consideration to achieving emissions reductions in line with targets, with additional factors also taken into account. |
| *Reduction incentives* | Direct signal to farmers through price on emissions.<br>On-farm incentive regime that pays for the uptake of approved mitigations and technology. |
| *Financial assistance* | No structured assistance or free allocation.<br>Low price to raise revenue for incentive payment for emissions mitigating technology and on-farm sequestration on an interim basis.<br>Transitional assistance may be explored for Māori agribusinesses and farmers who are unduly impacted by the pricing system. |
| *Sequestration* | The innovation pathway will set out the pathway and most appropriate reward scheme for on-farm vegetation.<br>However, as a backup measure, if the innovation pathway does not come into effect at the same time than the pricing system, on-farm sequestration through riparian planting and the management of indigenous vegetation will be recognised in the interim via a reduction in the levy payment from 2025 |
| *Revenue recycling* | Funds administration of the system, on-farm incentives, on-farm sequestration (if included in the system), a dedicated fund for Māori landowners, and other priorities identified through the revenue recycling strategy. |
| *Governance* | Either the Minister of Climate Change is responsible for the system, in consultation with Minister of Agriculture; or there will be joint ministerial responsibility across the Minister of Climate Change and the Minister of Agriculture. Cabinet will make the decision on this. The Commission will provide advice to Ministers on levy rates, after seeking advice from the sector and Māori (through a skills-based, non-statutory advisory board to be established). The advisory board will also directly advise Ministers on the strategy for investment of levy revenue including incentive and sequestration rates. Māori representatives on the advisory board will be responsible for advising Ministers on ring-fenced funds for Māori. |
| *Transitional options* | The effectiveness of the system will be improved over time, for example, by increasing the range of farm system changes and mitigations that can be recognised. |

| Qualitative Assessment of Option 2A | |
|---|---|
| *Effective* | At appropriate levy prices, this option is expected to more than achieve the targets, primarily through a combination of reduced production and stock numbers (especially on sheep and beef farms) and (to a lesser extent) uptake of mitigation technologies across all farm system types through the price signal and incentive payments.<br><br>In the system elements material in a modelling context, this option does not vary significantly from the Partnership's recommendations, so the economic modelling aggregated these two options.<br><br>Modelling results indicate that this option could achieve significant reductions, up to –12.3% in all gases (up to –13.6% methane, –8.2% nitrous oxide) below the baseline scenario in 2030. The results used a range of prices for methane (5–14c/kg$CH_4$), \$100/t$CO_2$-e for nitrous oxide, and \$50/t$CO_2$-e for incentive payments. This modelling showed that the 5c price for methane was likely insufficient to meet Aotearoa New Zealand's targets in combination with several other contributing factors in the baseline.<br><br>The farm-level point of obligation allows recognition of on-farm mitigation actions through emissions reporting.<br><br>The proposed system governance arrangements include independent, robust, and transparent policy setting and adjustment processes. |
| *Practical* | A report prepared by Perrin Ag and advice from the Commission indicates that a simple farm-level pricing is feasible for farmers, albeit easier for dairy than sheep and beef.<br><br>This option will involve much greater costs to both the administrator/regulator and farmers than any processor-level pricing system due to the large number of participants and time required by them to engage with the system.<br><br>Estimated costs are (administration costs may be partially or fully recovered from farmers):[16]<br>• establishment (administrator) – \$86m;<br>• operating (administrator) – \$32m pa;<br>• operating (farmers) – \$28-39m pa.<br>Can be adapted over time.<br><br>Aligns well with farm planning, other on-farm regulatory systems and NZ ETS policy, including forestry.<br><br>Proposed alterations to the NZ ETS should encourage investment and research to include further categories of vegetation in the Inventory and NZ ETS providing farmers with the full NZU price as a reward for eligible sequestration. This will require farmers and growers to participate in the NZ ETS market through trading of NZUs and meeting more stringent evidential requirements.<br><br>The inclusion of an interim system to recognise on-farm sequestration from 2025 via the recycling of levy revenue affects the practicality of this option with transitional arrangements still to be determined. |
| *Equitable* | Depending on price level, this option has greater impacts on sheep and beef sector with fewer mitigations available.<br><br>The relative price compared to the NZU value will affect how equitable this option is with other sectors; however, even if agricultural emissions are priced differently to the rest of the economy, it is still more equitable than the status quo because we are incentivising domestic reductions rather than purchasing mitigation overseas. Domestic reductions achieved decrease the volume of emissions that have to be purchased offshore to meet our NDC, avoiding the cost associated with this where these reductions are less expensive.<br><br>A portion of revenue is ringfenced for Māori agribusinesses, which can help alleviate some of the impacts of the pricing system. Māori agribusinesses will be able to make decisions on their farming operations and undertake their reporting and payment obligations as collectives. Collectives will be enabled for all participants that meet regulatory requirements as business owners from 2025. |
| *Additional comments* | This option is considered implementable in quarter four of 2025, though higher risk than the processor-level options. This option in the form presented for consultation had mixed buy in from farmers and the sector as it builds on the Partnership's proposals but ultimately does make some changes. We have reflected this feedback and addressed a number of concerns raised during consultation, resulting in a number of policy changes to strengthen sector support and buy-in for the option. |

[16] Here and through the rest of the document: These costs were estimated in October 2022, with the information available at the time. More accurate costs will become available as the business case is developed.

## Option 2B: Processor-level Levy (transitioning to Option 2A)




This option begins agricultural emissions pricing with processors, which can be triggered, if necessary, based on the feasibility of Option 2A coming into effect from 2025. It includes rewards to incentivise reductions on-farm and would transition over time to Option 2A.

Officials built this option on the basis of the Partnership's analysis of a processor-level system, which we further progressed as a potential interim option.

| | |
|---|---|
| *System* | Alternative pricing system. |
| *When would it start* | 01 January 2025. |
| *Point of obligation* | Processors (milk & meat).<br>Importers/manufacturers (fertiliser). |
| *Emissions calculation* | Based on emissions associated with livestock products, or with fertiliser sold. |
| *Emissions price* | Prices for biogenic methane and long-lived gases will be set out in regulations and will remain constant until the farm-level levy transition is enacted. |
| *Reduction incentives* | Cost of emissions passed onto farmers.<br>On-farm incentive regime that pays for mitigations and technology uptake. |
| *Financial assistance* | No structured assistance or free allocation.<br>Low price to raise revenue for on-farm incentives. |
| *Sequestration* | Primary channel is NZ ETS forestry. |
| *Revenue recycling* | Funds administration of the system and on-farm incentives. |
| *Governance* | Ministers are jointly responsible for oversight of the pricing system and spending of public money. |
| *Transitional options* | Optional short-term implementation pathway to Option 2A. |

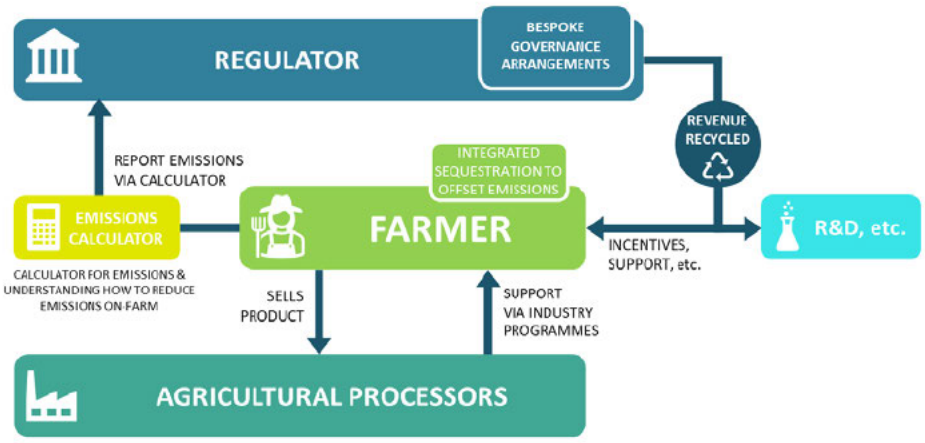
### Qualitative Assessment of Option 2B

| | |
|---|---|
| *Effective* | At the right levy prices, this option is expected to more than achieve the targets through a combination of reduced production and stock numbers (especially on sheep and beef farms) and uptake of mitigation technologies through incentive payments.<br>Modelling results indicate that this option could achieve significant reductions, up to –9.1% in all gases (up to –9.4% methane, –8.1% nitrous oxide) below the baseline scenario in 2030. The results used a range of prices for methane (5–14c/kg$CH_4$), \$100/t$CO_2$-e for nitrous oxide, and \$50/t$CO_2$-e for incentive payments. This modelling showed that the 5c price for methane was likely insufficient to meet Aotearoa New Zealand's targets in combination with several other contributing factors in the baseline. |

| | |
|---|---|
| *Effective (cont.)* | However, there is no direct price signal on farmers to engage in mitigation technologies when the obligation sits with processors (though this option will include revenue recycling to incentivise mitigations). This means that reductions in production and stock will be much more likely than the uptake of mitigation.<br>The proposed system governance arrangements include independent, robust, and transparent policy setting and adjustment processes. |
| *Practical* | The initial administrative costs are of a similar order of magnitude to Option 1A, with lower operating costs ($6 million pa).<br>The transition between two systems adds complexity, and the eventual farm-level system retains the same issues as directly going to farm-level.<br>Is not designed to be adaptable over time, as this option would only be implemented as a temporary mechanism before transitioning to farm-level pricing.<br>Aligns well with farm planning, other on-farm regulatory systems and NZ ETS policy, including forestry. |
| *Equitable* | Depending on the price level, this option has higher impacts on the sheep and beef sector and with less recourse to mitigation.<br>The relative price compared to the NZU value will affect how equitable this option is with other sectors; however, even if agricultural emissions are priced differently to the rest of the economy, it is still more equitable than the status quo because we are incentivising domestic reductions rather than purchasing mitigation overseas. Domestic reductions achieved decrease the volume of emissions that have to be purchased offshore to meet our NDC, avoiding the cost associated with this where these reductions are less expensive.<br>A portion of revenue is ringfenced for Māori agribusinesses, alleviating some of the impact of the pricing system. Māori agribusinesses will be able to make decisions on their farming operations when the system transitions to a farm-level levy system. |
| *Additional comments* | This option is considered implementable in 2025.<br>There was mixed support for this option. Māori submitters opposed an interim levy noting cost, complexity, ineffectiveness as well as the risk that it would remain in place. Sector submitters also generally opposed the interim levy, citing uncertainty for farmers and a blunt tax on production. Those that supported the levy noted it was a simple and straight forward approach and better to move forward than delay pricing. |

| Option 2C: Fertiliser-only Pricing in NZ ETS | |
|---|---|
| This option would separate out fertiliser pricing from livestock pricing.<br>Officials have built this option on the basis of the Commission's recommendation in their APA review to price fertiliser in the NZ ETS. Biogenic methane emission and nitrous oxide from livestock would be priced as per Option 2A. | |
| *System* | NZ ETS. |
| *When would it start* | 01 January 2025. |
| *Point of obligation* | Fertiliser importers/manufacturers. |
| *Emissions calculation* | Through existing NZ ETS reporting – based on emissions associated with fertiliser sold. |
| *Emissions price* | NZU surrender obligations for all gases in line with other NZ ETS participants. |
| *Reduction incentives* | Cost of emissions passed onto users of fertiliser, incentivising lower use. |
| *Financial assistance* | 95% free allocation (output-based) as prescribed in legislation. |
| *Sequestration* | Fertiliser emissions could be offset through NZ ETS forestry. |
| *Revenue recycling* | Goes into the general pool of revenue raised from the NZ ETS. |
| *Governance* | Uses existing NZ ETS governance structures. |
| *Transitional options* | N/A. |
| **Qualitative Assessment of Option 2C** | |
| *Effective* | Separating out fertiliser was not specifically modelled. However, Option 1 was modelled for all nitrous oxide (fertiliser and livestock) and suggests significant reductions in both.<br>By operation through the NZ ETS, the policy-setting and adjustment processes are independent, robust, and transparent. |
| *Practical* | This would be simple to set up because primary legislation and the reporting system are already in place.<br>Costs are likely to be low because of the small number of firms involved and inclusion into the existing NZ ETS. However, it would be necessary to set up a parallel system to price methane emissions so the total cost would be similar to whatever option is selected for that purpose.<br>Can be adapted over time, though selecting this option would likely set a clear direction for fertiliser pricing to continue via the NZ ETS.<br>May cause misalignment between incentives on fertiliser versus livestock emissions created through different policies and systems. |
| *Equitable* | Avoids bringing livestock farmers who use fertiliser into the NZ ETS, which could potentially create disruption with the significant change to number of participants and total unit supply. Similarly, avoids bringing growers without livestock into a farm-level system that requires more complex reporting.<br>Is expected to have slightly lower impacts than other options for sheep and beef farms as their reliance on fertiliser is lower than other sub-sectors such as dairy.<br>It is somewhat equitable with other sectors because of common inclusion of a portion of agricultural emissions in the NZ ETS, but 95% discount limits the benefits of this.<br>Is expected to have only minor equity differences from any other option for Māori agribusinesses (in particular, those with extensive systems) as their reliance on fertiliser is lower than other groups within the sector. |
| *Additional comments* | This option is considered implementable in 2025.<br>This option was supported by some submitters, primarily from the environmental sector. Sector and Māori submitters generally did not support this option preferring fertiliser to be priced within the farm-level pricing system. |

## Option 3: Partnership's Farm-level Levy




This option begins with simplified emissions pricing at the farm-level and is delivered through a levy system. It includes rewards to incentivise reductions and sequestration on-farm and would incorporate further improvements over time.

Officials have endeavoured to present this option here without modifications from the Partnership's original recommendations.[17]

| | |
|---|---|
| *System* | Alternative pricing system |
| *When would it start* | 01 July 2025 |
| *Point of obligation* | Farmers and growers (business owner) |
| *Emissions calculation* | Using a simple calculator that uses a range of data points to directly estimate on-farm emissions (the Partnership's proposed calculator and data requirements differ from and are more complex than in option 2A) |
| *Emissions price* | Long-lived gas price set to fund sequestration and administration costs<br>Unique methane price set through advisory process and approved by Ministers |
| *Reduction incentives* | Direct signal to farmers through price on emissions<br>On-farm incentive regime that pays for technology uptake |
| *Financial assistance* | No structured assistance or free allocation<br>Low price to raise revenue for on-farm incentives.<br>Levy relief available |
| *Sequestration* | Sequestration payments for vegetation (that are already verified elsewhere) are fully integrated into the levy, with a broad range of on-farm vegetation recognised over time |
| *Revenue recycling* | Funds administration of the system, on-farm incentives, and sequestration |
| *Governance* | New governance structures to advise on price, progress toward farm-level pricing, revenue use, etc. |
| *Transitional options* | Short-term implementation pathway to more detailed emissions reporting and recognition of sequestration as defined in the Partnership's recommendations (by 2027) |

### Qualitative Assessment of Option 3

| | |
|---|---|
| *Effective* | At the right levy prices, this option is expected to more than achieve the targets through a combination of reduced production and stock numbers (especially on sheep and beef farms) and uptake of mitigation technologies through incentive payments.<br>The economic modelling covered both this option and Option 2a with one scenario, as they did not significantly differ. |

[17] The sector Partners, in their submission to the government's consultation process, identified on a narrower range of key elements. In reflecting feedback received in policy changes, officials primarily focused on these key elements identified. This option as presented here solely reflects the Partner's 2022 recommendations report, not their subsequent submission.

| | |
|---|---|
| *Effective (cont.)* | Modelling results indicate that this option could achieve significant reductions, up to –12.3% in all gases (up to –13.6% methane, –8.2% nitrous oxide) below the baseline scenario in 2030. The results used a range of prices for methane (5–14c/kg$CH_4$), \$100/t$CO_2$-e for nitrous oxide, and \$50/t$CO_2$-e for incentive payments. This modelling showed that the 5c price for methane was likely insufficient to meet Aotearoa New Zealand's targets in combination with several other contributing factors in the baseline.<br><br>The farm-level point of obligation allows on-farm behaviour change to be recognised through the reporting and emissions bill.<br><br>The proposed system governance arrangements are relatively robust and transparent but lack sufficient independence. The very low price and the framework for price settings are not target-oriented. |
| *Practical* | The option is considered infeasible to implement, as the 'simplified' initial system still has considerable cost and complexity. The 2027 elements need to be legislated and implemented as one phase of work, so this transitional period does not provide additional time for policy development, legislation, regulations, and implementation.<br><br>Its costs were estimated[18] as:<br>• establishment (administrator) – \$138–165m;<br>• operating (administrator) – \$41–45m pa;<br>• operating (farmers) – \$28–39m pa.<br>The detail of the proposed sequestration option is impractical, creating a significant administrative and compliance burden. The detailed reporting requirements also limit the practicality of this option.<br><br>Reporting will be particularly challenging for sheep and beef farms as fewer are currently using models or reporting farm activities. Also, monthly livestock reconciliations (or preferably livestock movements) will be relatively more complex and time consuming for this sector. The level of detail required for detailed reporting includes quarterly animal weighing, timing of mating, and dates of grazing different feeds.<br><br>Can be adapted over time and has set pathways for improvements.<br><br>Could align with farm planning and other on-farm regulatory systems, but is significantly misaligned with existing NZ ETS policy, including forestry. |
| *Equitable* | The inclusion of a wide scope of sequestration mitigates the impacts on some sheep and beef farms and on Māori, and the overall option supports long-term economic viability for the sector.<br><br>Not equitable between the agricultural sector and wider Aotearoa New Zealand with the sequestration component as currently designed. |
| *Additional comments* | This option is not considered implementable by 2025.<br><br>Most submitters commented on the departure of the government's proposal from this proposal by the Partnership and advocated for the complete adoption of the proposal or much closer alignment. Some non-sector submitters considered the proposals an inequitable subsidy for the agricultural sector. |



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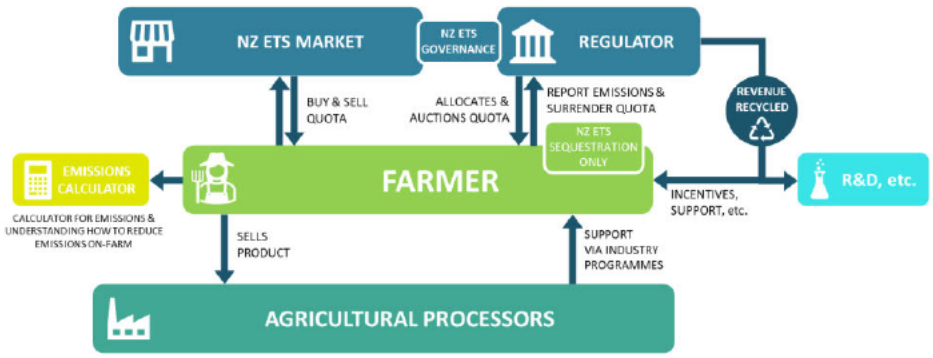
## Option 4: Farm-level Pricing in NZ ETS




This option already exists in legislation and puts farmers into the NZ ETS directly.

It could be implemented directly or transitioned to from the Option 1 'backstop.'

| | |
|---|---|
| *System* | NZ ETS. |
| *When would it start* | 01 January 2025, or at a later date if beginning with Option 1. |
| *Point of obligation* | Farmers and growers (likely business owner). |
| *Emissions calculation* | Through NZ ETS reporting – based on emissions associated with livestock, or with fertiliser bought. |
| *Emissions price* | NZU surrender obligations for all gases in line with other NZ ETS participants. |
| *Reduction incentives* | Direct signal to farmers through price on emissions.<br>Possibility of on-farm incentive regime. |
| *Financial assistance* | Possibility of free allocation regime, likely output based as already provided for in legislation. |
| *Sequestration* | Primary channel is NZ ETS forestry, with investigation into improving access for agriculture. |
| *Revenue recycling* | Goes into the general pool of revenue raised from the NZ ETS, but agriculture is then eligible for recycled revenue out of this pool and/or has a portion ringfenced for incentive payments. |
| *Governance* | Uses existing NZ ETS governance structures. |
| *Transitional options* | N/A (either directly implemented or a possible system transitioned to from Option 1). |

### Qualitative Assessment of Option 4

| | |
|---|---|
| *Effective* | This option was not modelled, but given the significant reductions achieved through the NZ ETS by Option 1, these same prices applied at the farm-level are likely to result in significant reductions.<br>The farm-level point of obligation allows on-farm behaviour change to be recognised through the reporting and emissions bill, for those farmers able to sufficiently absorb the high prices to make changes on-farm.<br>By operation through the NZ ETS, the policy setting, and adjustment processes are independent, robust, and transparent. |
| *Practical* | This option is considered highly impractical and expensive, both from a regulatory perspective (because of the large number of participants introduced into the NZ ETS) and for farmers (as this is a much more complex system to interact with).<br>Can be adapted over time, though selecting this option would likely set a clear direction for pricing to continue via the NZ ETS.<br>Aligns well with existing NZ ETS policy, including forestry, etc., but will be more complex to align with farm planning. |

| | |
|---|---|
| *Equitable* | This option puts high costs on the sheep and beef sector, of a similar magnitude to Option 2A, and can potentially drive land-use change out of sheep and beef.<br>It is equitable with other sectors because of common inclusion in the NZ ETS, but 95% discount limits the benefits of this.<br>This option also limits Māori agribusinesses from making decisions and being recognised for actions on their farm. A blunt price passed down from the processor is also likely to not consider disproportionate disadvantages faced by Māori agribusinesses. However, this can be alleviated through ring-fenced revenue being used to support Māori agribusinesses. |
| *Additional comments* | This option is not considered implementable by 2025 – the system and legislation already exist, but farmers would not be prepared to participate by 2025, and significant updates would be needed for the existing system to handle 23,000 or more new participants.<br>This option did not form part of the consultation process, due to its infeasibility and being ruled out in previous stages of analysis and engagement. |

## Key issues in and approaches to comparing options

### Modelling the impacts on agriculture

52. Economic modelling using farm-scale data was commissioned to support decisions on the preferred pricing option and carried out by Manaaki Whenua – Landcare Research (MWLR) in 2022. The MWLR modelling used several pricing options, which collectively cover off the majority of the options presented here (noting that the modelling was limited to a core set of policy scenarios):

| Modelled Scenarios | Policy Options |
|---|---|
| 'Processor NZ ETS' – Agricultural processors and fertiliser manufacturers & importers in the NZ ETS | Option 1A |
| 'Processor Levy' – with separate components for carbon (based on NZ ETS prices) and methane | Option 2B |
| 'Farm-level Levy' – with separate components for carbon (based on NZ ETS prices) and methane | Option 2A<br>Option 3 |
| Not represented in the modelling | Option 2C<br>Option 4 |

*Table 4: The scenarios used by MWLR to represent the range of pricing system options*

53. The farm-level option was further broken down by modelling the impacts of different prices for methane:

| Units | $CH_4$ Price A | $CH_4$ Price B | $CH_4$ Price C | $CH_4$ Price D |
|---|---|---|---|---|
| $/tCO2-e | $1.79 | $2.86 | $3.93 | $5.00 |
| c/kg$CH_4$ | 5c | 8c | 11c | 14c |

*Table 5: Range of prices used for biogenic methane in the farm-level levy*

54. The modelling compares the impact of each option with a baseline of what would occur with no pricing of agricultural emissions in 2030, as seen in Table 6 and Table 7:

| | Processor NZ ETS | Processor Levy | Farm-level levy | | | |
|---|---|---|---|---|---|---|
| | | | $CH_4$ Price A | $CH_4$ Price B | $CH_4$ Price C | $CH_4$ Price D |
| **Emissions Reductions** | | | | | | |
| All gases | –16% | –9% | –6% | –10% | –11% | –12% |
| Methane | –17% | –9% | –7% | –11% | –12% | –14% |
| Nitrous oxide | –13% | –8% | –1% | –6% | –7% | –8% |
| **Commodity production** | | | | | | |
| Milk solids (t) | –8% | –5% | –3% | –5% | –4% | –5% |
| Lamb (t) | –19% | –9% | –11% | –20% | –18% | –20% |
| Beef (t) | –51% | –44% | +50% | +11% | +8% | +10% |
| **Net revenue** | | | | | | |
| Dairy | –10% | –6% | –4% | –6% | –6% | –7% |
| Sheep & beef | –32% | –17% | –11% | –18% | –21% | –24% |

| | Land–use change | | | | | |
|---|---|---|---|---|---|---|
| Dairy | –4% | –2% | –1% | –2% | –2% | –2% |
| Sheep & beef | –16% | –7% | 0% | –8% | –10% | –12% |
| Indigenous forest / scrub | +14% | +6% | 0% | +9% | +7% | +6% |

*Table 6: Key results from the MWLR model – arable, fruit, vegetable, and forestry also modelled, which can be found in the final modelling report by MWLR. Refer to table 4 for how modelling carried out aligns with final options presented in this SAR.*

| *[All gases (net, AR5) are expressed in Mt $CO_2$-e]* | Emissions Budget 2 (2026–30) Provisional | Additional emissions reductions required |
|---|---|---|
| Agriculture – emissions budgets sub-target | 191.0 | |
| Agriculture – baseline | 199.0 | 8.0 |
| Processor-level NZ ETS | 187.3 | –3.7 |
| Processor-level levy | 196.5 | 5.5 |
| Farm-level levy – $CH_4$ price A | 199.4 | 8.4 |
| Farm-level levy – $CH_4$ price B | 194.9 | 3.9 |
| Farm-level levy – $CH_4$ price C | 193.4 | 2.4 |
| Farm-level levy – $CH_4$ price D | 191.4 | 0.4 |

*Table 7: Estimate of how policies perform against Emissions Budget 2*

55. The key finding from the modelling was that all options can meet the 2030 biogenic methane emissions reduction targets[19] except for the lowest methane price (A), but most fall short of emissions budget period two. This included some other measures in combination with emissions pricing, such as NZ ETS forestry. However, assessment of these results alongside our subsequently published Eight National Communication[20] suggests that $CH_4$ price A may be sufficient.

56. The price of methane, and consequential reductions in production and stock numbers, is a key driver of emissions reductions. The adoption of mitigation technology on farm in response to incentives is another driver of emissions reduction particularly under the farm level levy.

57. The NZ ETS option at processor-level would generate the highest reductions in emissions, but also the largest losses in production.

58. The modelling also incorporated the impacts of implementation of emissions-reducing technology, assuming slow versus rapid uptake ('headwind' and 'tailwind' scenarios); and of payments to farmers for land-use change (especially to scrub and indigenous forest).

[19] See Box 3.

[20] environment.govt.nz/publications/new-zealands-eighth-national-communication

59. New technologies had minor impacts, even under the most optimistic assumptions about uptake.

60. Sequestration incentives (particularly payments for new scrub sequestration) appear to improve the effectiveness of pricing. They reduce gross methane and nitrous oxide emissions through incentivising landowners to retire larger areas of marginal land and carry less livestock. Carbon removals from this vegetation are small in comparison.

61. All options are expected to have little impact and only a small reduction in profit for horticulture and arable farming. Analysis undertaken for the He Waka Eke Noa Partnership's proposal[21] shows that horticulture and arable farms will simply pay the levy and are not expected to actively reduce emissions – in fact, their emissions will increase as a result of increased production from changes in land use away from sheep & beef and dairy farming.

62. It should be noted that this modelling makes a range of assumptions and has limitations:

    a. It assumes there is no uptake of farm system changes and mitigation practices in the baseline.

    b. The impact of the National Policy Statement for Freshwater Management was not incorporated in the model, which could be significant as this policy is expected to drive widespread changes in farm practices and land-use by 2030.

    c. Prices for farm outputs are assumed in 2030 to be equivalent to the average of the past five years.

    d. The modelling framework assumes that farm and land-use decisions are driven by profit maximisation and that farmers have good information about the range of options available to them.

    e. The commercial availability, cost and efficacy of mitigation technologies is highly uncertain.

63. Following peer review of the modelling, a number of updates were made, including nuancing the costs of certain mitigations for different animals and farm systems, and adjusting the elasticities related to the balance of land-use change versus uptake of mitigations.

### Cost-Benefit Analysis

64. The MWLR modelling was used as the basis for a Cost-Benefit Analysis (CBA) model prepared by the New Zealand Institute of Economic Research (NZIER). Like MWLR, the CBA compares costs and benefits of each option to what would occur with no pricing of agricultural emissions in 2030.

65. A more detailed breakdown of costs and benefits of the preferred option (Option 2A: Basic Farm-level Levy) is presented in Table 12 and Table 13, following the summary of our analysis behind determining a preferred option.

66. This CBA incorporates the following:

    a. *benefits*, in terms of:

[21] hewakaekenoa.nz/wp-content/uploads/2022/06/FINAL-Pricing-agricultural-GHG-emissions-sectoral-impacts-and-cost-benefit-analysis

- emissions reductions, valued at $108.62/tCO -e – split between reductions that achieve NZ's domestic targets, and reductions beyond that (with negative benefits where emissions do not achieve the targets);
- demand in overseas markets for carbon neutral products – this is estimated to increase net revenue by 18% on farms that can supply carbon-neutral milk and meat.[22] Emissions reductions in Aotearoa New Zealand in line with targets will enable marginally more supply of carbon-neutral product from Aotearoa New Zealand. We assume an additional 10% of Aotearoa New Zealand product exported will be able to make carbon neutral claims and meet this demand.[23]

b. *costs,* in terms of*:*

- losses in net farm revenue as a result of lower production;
- administrative costs to government and compliance costs to farmers.

67. The CBA estimates the Net Present Value (NPV) of costs and benefits, in real (inflation adjusted) dollars, using a discount rate of 5% (per standard Treasury guidance[24]) over the period from 2023 to 2035.

68. The administrative costs of and compensation to farmers for sequestration and uptake of mitigation technologies, as well as the benefits of the additional sequestration/mitigation incentivised, are not quantifiably captured within the cost-benefit analysis. However, they have been captured within the impact analysis modelling (see previous section), where the emissions reduced on farm and the cost of compensation within the system are wrapped up into the total cost and benefit figures resulting from the modelling.

69. s 9(2)(b)(ii)



[22] A simple average of the range of 11–25% identified in Lucci, G, W Yang, S Ledgard, G Rennie, G Mercer, and M Wang. (2020). *The added value of value-add: brief synopsis of findings* Credence Attributes On Farm - Our Land & Water - Toitū te Whenua, Toiora te Wai (ourlandandwater.nz)

[23] This would incentivise higher levels of production on farms that would secure this premium, above the assumptions in the MWLR model. However, this has not been incorporated into the model.

[24] Cost Benefit Analysis for Social Investments (treasury.govt.nz)

s 9(2)(b)(ii)

70. The above table shows that:

    a. The option for a farm levy at the lowest price ($CH_4$ Price A) has costs that slighly exceed benefits (significantly exceeding benefits if there is no premium for carbon action). This is because the reductions in emissions estimated within the MWLR model at this price are below the GHG domestic target.

    b. All other options have positive net benefits and benefit-cost ratios greater than 1, which indicates that they have positive impacts compared to not pricing agricultural emisssions.

    c. All of these options have similar benefit-cost ratios, ranging from 1.20 (the farm levy CH4 Price B) to 1.27 (the farm levy $CH_4$ Price D.

    d. Options which result in higher emission reductions have higher benefits, but at a cost of higher losses in net farm revenue.

    e. The impact of removing any premium for carbon neutral product would lower benefit-cost ratios, but (for other than the low price option) these still remain positive.

71. Sectoral impacts are discussed in paragraphs 90–95.

### Key trade-off: processor versus farm-level pricing

72. The question of who within the sector should be subject to pricing involves the following trade-offs:

    a. *Processors*, such as meat works, dairy factories, and fertiliser manufacturers and importers.

        - As these are relatively few in number (approximately 80), the pricing system would be low cost. The He Waka Eke Noa Partnership estimated establishment costs of $3 million and operating costs of $10m per annum to bring processors into the NZ ETS system, with most operating costs falling on

processors.[25] Separate estimates for a processor levy are for operating costs of $6m per annum.

- The levies would be passed on to farmers through reductions in prices paid for milksolids and stock for slaughter, which would in turn influence on-farm decisions on production, stock, and land use.

b. *Farmers*, including both farmers of livestock and growers of crops, fruit and vegetables

- As there are an estimated 23,000 farms potentially subject to pricing, this would be relatively expensive to operate. The Partnership estimated establishment costs of $117–141 million (subsequently re-estimated at $70m) and operating costs of $32m to government and $17m to farmers per annum
- However, depending on specific policy design decisions, farm-level pricing has two advantages over processor-level pricing:
  - It more accurately aligns the profile of on-farm emissions for sheep and beef farms, in that prices would be based on livestock numbers at any given time, rather than when stock is sent to meatworks for slaughter, and therefore provides more appropriate incentives.
  - For all farm types, it would provide stronger incentives for the development and uptake of actions to reduce emissions such as farm management practices and new technologies. While these technologies are limited and expensive at present, improvements may be expected if sufficient numbers of farms demand them.

### Emissions leakage modelling

73. Dairy, meat, and wool products comprise over half of Aotearoa New Zealand's export revenue, with the majority of agricultural production exported into world markets, where it competes with 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 those emissions increases are not offset by reductions elsewhere in those economies, this process reduces the impact that Aotearoa New Zealand's emission reductions have on overall global emissions, resulting in emissions leakage.

74. Recent OECD[26] modelling suggests that, in general, emissions leakage in agriculture will be lower if more mitigation technology is available and a wider range of countries reduce agricultural emissions. There are also other measures to minimise leakage risks, such as specific terms in Aotearoa New Zealand's free trade agreements.

75. The Commission's advice on agricultural assistance also 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'.



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These are combined costs to the government and to processors/ farmers. Some or all of the government's costs may be cost recovered from levy payers.
The document also provides estimates of costs to government and farmers of systems to provide incentive payments for implementing new technologies and for sequestration of land.

26 OECD (2021), Global assessment of the carbon leakage implications of carbon taxes on agricultural emissions.

76. The Government has modelled the policy options considered in this discussion document for one illustrative scenario. This modelling uses the Aglink-Cosimo model, which analyses supply and demand of world agricultural products and is managed and developed by the OECD and FAO.[27] Agricultural greenhouse gas emissions have been added to Aglink-Cosimo in its most recent update.

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

| **Farm-level levy (Med price)** | **NZ emissions change** | **Global emissions change** | **Leakage** | |
|---|---|---|---|---|
| *Product* | *$MtCO_2$-e* | *$MtCO_2$-e* | *$MtCO_2$-e* | *% of NZ reductions leaked* |
| Dairy | –0.7 | –0.4 | 0.3 | 37% |
| Beef | –1.4 | –1.4 | 0 | 0% |
| Sheep meat | –1.6 | 0.5 | 2.1 | 133% |
| **Total** | **–3.7** | **–1.1** | **2.4** | **65%** |
| **Processor-level NZ ETS** | **NZ emissions change** | **Global emissions change** | **Leakage** | |
| *Product* | *$MtCO_2$-e* | *$MtCO_2$-e* | *$MtCO_2$-e* | *% of NZ reductions leaked* |
| Dairy | –1.3 | –0.7 | 0.6 | 47% |
| Beef | –5.9 | –1.3 | 4.6 | 78% |
| Sheep meat | –1.7 | 0.6 | 2.3 | 136% |
| **Total** | **–8.9** | **–1.4** | **7.5** | **84%** |

*Table 9: Emissions leakage modelling results*

78. Submitters were generally concerned about the risks of emissions leakage as a result of this proposal. However, there was also misinterpretation that the emissions leakage estimates above showed net increases global emissions, as opposed to net reductions despite some leakage.

## Fiscal sustainability analysis

79. Since the farm level levy option achieves emissions reductions through both the direct impact of the price and the use of the levy proceeds to incentives the adoption of emissions reducing technology, managing the levy proceeds to achieve these goals is important. The revenue recycling strategy is the main mechanism to achieve fiscal sustainability within the system. Within each three-year revenue strategy, the expenditure planned for in the strategy will be achieved through alterations to rates of reward for adopting emissions mitigating technology and (potentially) sequestration on eligible on farm vegetation. These adjustments to rates of reward can occur annually.

80. s 9(2)(b)(ii)

[27] The Food and Agriculture Organization of the United Nations.

s 9(2)(b)(ii)

[redacted]

| Items | Q4 2025 | 2026 | 2027 |
|---|---|---|---|
| Revenue (5 cents per kg $CH_4$ and $4 per tonne $CO_2e$ $N_2O$ levy) | $20.74 | $82.41 | $81.94 |
| Expenditure - Low mitigation and sequestration uptake scenario | | | |
| Mitigation incentives ($150/tonne $CO_2$-e low uptake) | $0.32 | $4.67 | $10.63 |
| Sequestration incentives ($20/tonne $CO_2$-e low uptake) | $3.59 | $14.84 | $15.33 |
| Research and development | $2.95 | $12.03 | $12.27 |
| Administration | $6.18 | $24.70 | $24.70 |
| Māori landowners' fund | $0.88 | $3.61 | $3.68 |
| **Total expenditure (low uptake)** | **$13.91** | **$59.85** | **$66.61** |
| **Scheme surplus or deficit (low uptake)** | **$6.82** | **$22.56** | **$15.33** |
| | | | |
| Expenditure - High mitigation uptake scenario | | | |
| Mitigation incentives ($150/tonne $CO_2$-e high uptake) | $0.57 | $6.33 | $16.93 |
| Sequestration incentives ($20/tonne $CO_2$-e high uptake) | $6.47 | $27.39 | $28.90 |
| Research and development | $2.66 | $10.88 | $11.10 |
| Administration | $6.18 | $24.70 | $24.70 |
| Māori landowners' fund | $1.33 | $5.44 | $5.55 |
| **Total expenditure (high uptake)** | **$17.20** | **$74.73** | **$87.17** |
| **Scheme surplus of deficit (high uptake)** | **$3.53** | **$7.68** | **-$5.23** |

*Table 10: Estimated revenue and expenditure of the farm-level levy – millions of dollars*

## How do the options compare to the criteria?

81. The table below summarises how each option performs against the criteria. Note that in interpreting the table:

    a. The sub-criteria are condensed in the left-hand column of the table below for reference. The full descriptions are included in Table 2;

    b. Details of the qualitative assessment behind this scoring can be found in the tables that describe each option in the sub-section "What options are being considered?" under Section 2.

| | **Option 1** *Processor-level Pricing in NZ ETS* | **Option 2A** *Basic Farm-level Levy* | **Option 2B** *Interim Processor-level Levy* | **Option 2C** *Fertiliser-only Pricing in NZ ETS* | **Option 3** *Partnership's Farm-level Levy* | **Option 4** *Farm-level Pricing in NZ ETS* |
|---|---|---|---|---|---|---|
| **1 – Effective** | | | | | | |
| (a) targets and budgets | ✓ *Per modelling results, all options can achieve gross emissions reductions.* | ✓ *Per modelling results, all options can achieve gross emissions reductions.* | ✓ *Per modelling results, all options can achieve gross emissions reductions.* | ✓ *Per modelling results, all options can achieve gross emissions reductions.* | ✓ *Per modelling results, all options can achieve gross emissions reductions.* | ✓ *Per modelling results, all options can achieve gross emissions reductions.* |
| (b) on-farm mitigation | ✗ *May be more effective depending on the final form of the Early Adopters Fund.* | ✓ *Allows farmers to consider their full emissions profile through one system.* | ✗ *May be more effective depending on the final form of the Early Adopters Fund.* | ✗ *Does not allow farmers to consider their full emissions profile through one system.* | ✓ *Allows farmers to consider their full emissions profile through one system.* | ✓ *Allows farmers to consider their full emissions profile through one system.* |
| (c) policy setting processes | ✓ *Processes are independent, robust, and transparent.* | ✓ *Processes will be independent, robust, and transparent* | ✓ *Processes will be simple and transparent* | ✓ *Processes are independent, robust, and transparent.* | — *Transparent and somewhat robust, but not independent.* | ✓ *Processes are independent, robust, and transparent.* |
| **2 – Practical** | | | | | | |
| (a) simple and easy | ✓ *Simplest to set up bas legislation and reporting are already in place* | ✗ The transition arrangements for sequestration and possible interim processor levy add complexity to this option | — *Transitional arrangement only* | ✓ *Simplest to set up bas legislation and reporting are already in place* | — *Difficult to implement by 2025 but has a defined implementation pathway* | ✗ *Impractical and expensive due to large number of participants* |
| (b) low cost[28] | ✗ *Lower cost to set up and operate than farm level options* | ✗✗ *More expensive than processor-level options* | — Though this option is low-cost, it is a short-term investment before transitioning to farm-level pricing. | ✗ *Lower cost to set up and operate than farm level options* | ✗✗ *More expensive than processor-level options* | ✗✗ *More expensive than processor-level options* |
| (c) adaptable | ✓ *Can be adapted over time* | ✓ *Can be adapted over time* | — Not designed to be adaptable as only temporary. | — Separating fertiliser out may limit future interactions between fertiliser and livestock emissions pricing. | — Though this option does incorporate changes over time and retain optionality for certain settings, it does so within a pre-determined framework that has limited flexibility. | ✓ *Can be adapted over time* |
| (d) actively aligned | — Aligns with NZ ETS, forestry, etc. Does not align with farm planning. | ✓ Aligns with farm planning | — Aligns with farm planning. Does not align with NZ ETS. | — Aligns with NZ ETS, forestry, etc. Does not align with farm planning. | — Aligns with farm planning. Does not align with NZ ETS, forestry, etc. | — Aligns with NZ ETS, forestry, etc. Does not align with farm planning. |
| **3 – Equitable** | | | | | | |
| (a) participants within the sector | ✗ *Price passed down from processors* | ✓ Inclusion of sequestration reduces the impacts on sheep and beef farms. Minor impacts on other farm types | ✗ *Price passed down from processors* | — Similar equity issues to the backstop; could prevent fertiliser-only participants (e.g., growers) coming into a complex farm-level system. | ✓ Inclusion of sequestration reduces the impacts on sheep and beef farms. Minor impacts on other farm types | ✗ *Will likely have a greater impact on sheep and beef* |
| (b) other sectors and wider economy | ✓ However, noting that agriculture will receive higher free allocation. | — Not priced the same as other sectors. | — Not priced the same as other sectors. | — However, noting that agriculture will receive higher free allocation, and this is only some of emissions from agriculture. | — Not priced the same as other sectors. | — Agriculture will receive higher free allocation and could disrupt the market with many new participants. |
| (c) Māori agribusinesses | — No specific funding in initial system. | ✓ Specific funding for Māori agribusiness. | — No specific funding in initial system. | — No specific funding in system. | ✓ Specific funding for Māori agribusiness. | — No specific funding in initial system. |
| (d) Rural communities | ✗ Generates the largest losses in production and subsequent impact on rural communities | ✓ Inclusion of sequestration reduces the impacts on sheep and beef farms and flow-on impacts on rural communities. | ✓ *Transitional arrangement on processors* | — Similar equity issues to the backstop but avoids bringing fertiliser-only participants into a farm-level system. | ✓ Inclusion of sequestration reduces the impacts on sheep and beef farms and flow-on impacts on rural communities. | ✗ Higher NZ ETS price will have greater impact on rural communities |
| **Overall assessment** | **+1** | **+5** | **+2** | **+1** | **+3** | **–1** |

*Table 11: Multi-criteria analysis for the full set of pricing system options considered*

[28] Note that, since *no pricing* has been used as the baseline for the CBA, all options generate additional costs above this baseline. The difference between options is that some (farm-level) generate much higher costs than others (processor-level).

## What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

82. Officials recommend that Option 2A: A Basic Farm-level Levy is the preferred option on the basis of the analysis presented in this SAR.

83. This option reflects the proposed alternative pricing system described in the s215 report published by Ministers in December 2022. The Basic Farm-level Levy is based on the farm-level, split-gas levy designed by the Partnership, with changes informed by feedback received from consultation and engagement with Māori, the agriculture sector, and the general public.

84. In summary from our analysis of the range of options:

    a. The results of the economic modelling suggest that all of the options would be effective in terms of achieving absolute emissions reductions. Therefore all score positively against sub-criterion 1(a).

    b. Processor pricing provides very little incentive for farm-level mitigation such as improved practices and technology, and therefore these options score negatively against sub-criterion 1(b). Note however that, at least in the initial stages, the impacts of farm-level mitigation are minor.

    c. All options have costs above the no pricing baseline, and all farm-level options are more expensive to establish and operate compared to processor pricing.

    d. All options improve equity between agriculture and other industries that are already subject to emissions pricing through the NZ ETS, recognising that agriculture will still be treated relatively generously because of proposed relatively low initial pricing..

    e. All options have substantially different impacts across sub-sectors of agriculture. While the size of the impacts varies between options, the general trend is:

        - significant losses of production and revenue in sheep and beef farming;
        - some losses of production and revenue in dairy farming;
        - minor increases in production and revenue in other types of farming, in particular growers of crops, fruit and vegetables.

    f. All options except the Partnership's proposal establish robust and transparent processes for price setting and other policy settings and therefore score positively against this sub-criterion. The Partnership's proposal is transparent, but does not meet the test of independence.

85. All options are designed in a way that can align with either the NZ ETS (e.g., forestry policy) or farm planning systems (e.g. freshwater farm plans). Option 2A is expected to align well with both following the proposed changes to the NZ ETS to include additional verified vegetation categories Officials conclude that the most effective and feasible approach is Option 2A (Basic Farm-level Levy).

86. We see Option 2A as the best compromise for implementing the core aspects of the Partnership's recommended option, and addressing concerns raised during consultation, while also ensuring that pricing of some form comes into effect in 2025.

This includes modifications following further negotiation with the Partnership post-consultation. This approach also draws on the Commission's advice that a farm-level approach is preferred, though sequestration and synthetic nitrogen fertilisers are proposed to be included within the same system from 2025 rather than separated out (noting that sequestration may shift into the NZ ETS in future).

## Detailed Overview of Optionality and System Elements in Option 2A

87. This section steps through in more detail the various aspects within Option 2A that have been proposed for Cabinet approval in early 2023. These reflect modifications to the original version of Option 2A that was included in the 2022 consultation document, based on feedback from submitters and further negotiation with the Partnership and between various Ministers.

88. Note that, in many cases, rather than designing and assessing a range of discrete options, officials have taken negotiated positions and/or minimum viable products needed to meet implementation deadlines and worked to improve and streamline these for the best outcomes against our criteria.

89. The table below sets out these system elements, mirroring the Cabinet paper that this SAR will accompany, and includes explanations of how positions were reached on each element, and how we have balanced their design to meet the criteria as best possible within the constraints of this iterative policy context.Note that the final emissions reduction modelling and cost-benefit analysis of Option 2A presented throughout this document represents the modified version of the option post-consultation. For quantitative analysis of the unmodified version presented during consultation, please see the 2022 interim RIS.

*Purpose of the levy (Refer to Section 1 of the 2023 Cabinet paper)*

| Proposed System Elements | Optionality / Analysis | Assessment Against Criteria |
|---|---|---|
| • The purpose is "to incentivise emissions reductions from the agricultural sector aligned with our climate change targets and international commitments."<br>• In addition, the levy will fund administration costs, support Māori, and a revenue recycling strategy will be developed to redirect remaining funds to sequestration, mitigation uptake, extension, and R&D. | • The levy is designed to achieve emissions reductions and two options were originally considered – a high price with assistance or a low price with revenue recycling (preferred). | *Effective* – Yes, relatively low prices + revenue can achieve emissions reductions.<br>*Practical* – Yes, can be practically implemented in 2025.<br>*Equitable* – Yes, equitable across sectors and a lower price is required to meet methane compared to that needed for long-lived gases |
| *Administration and revenue recycling* | • The levy is required to be self-funding covering administration costs and revenue expenditure.<br>• We expect that a small number of participants will generate particularly high costs for administrative services and functions. A regulation-making power is proposed that would enable fees or charges (i.e., cost recovery) to be imposed on participants who generate these atypical costs. Any charges will be set at rates consistent with other similar regimes and based on the Auditor General's guidance and would be subject to consultation and a regulatory impact assessment process. | *Effective* – Yes, the levy will be self-funding and fiscally sustainable *Practical* – Yes, the system is designed to cover the ongoing costs of operation now and into the future.<br>*Equitable* – Yes, consistent with the principle that those who generate the need for a system will pay for its operation including cost recovery for individuals that generate high costs |

*Who pays the levy (Refer to Section 2 of the 2023 Cabinet paper)*

| Proposed System Elements | Optionality / Analysis | Assessment Against Criteria |
|---|---|---|
| *Legal obligation*<br>• IR-registered businesses who meet specified thresholds.<br>• Can be delegated to a third party.<br>• Levy participants can form collectives.<br>• Procedural detail in legislation. | • Thresholds align with the Partnership's recommendations and has the highest emissions coverage possible while minimising the number of participants that need to be managed (and administration costs).<br>• IR-registered businesses align with the Partnership's recommendations and links most directly to on-farm decisions.<br>• Third party delegation is intended to align with the tax system.<br>• Enables collective reporting for all levy participants to ease administrative burden and collectively benefit from sequestration and incentives. | *Effective* – Yes, capturing the majority of emissions.<br>*Practical* – Yes, encourages actions linked to farm decision making.<br>*Equitable* – Neutral, further work needed where complex business structures exist |
| *Complex business structures*<br>• Special provisions (potentially including amendment to other legislation) needed for sharemilking, lease holders, and collective structures. | • Consultation, feedback, and outside agencies noted issues with the point of obligation for complex business structures.<br>• Analysis determined a number of issues that could be addressed with special provisions. | *Effective* – Neutral, while provisions are intended to capture emissions that the point of obligation may miss, it may not address all issues<br>*Practical* – Neutral, while it addresses potential emissions it does add additional admin costs.<br>*Equitable* – Yes, allows for accountability for emissions to be determined across all business structures. |
| *Collectives*<br>• Enabled if practical in 2025.<br>• Only include participants who individually meet the levy threshold.<br>• IR-registered entity nominated. | • Consultation and feedback noted overwhelming support for collectives to be enabled.<br>• Analysis of different collective structures determined collectives for all levy participants could be enabled.<br>• A nominated entity was included to align with IR processes. | *Effective* – Yes, it will potentially increase compliance with the levy.<br>*Practical* – Neutral, while it can be enabled it will increase auditing and verification as well as admin costs.<br>*Equitable* – Yes, all participants are able to enter into collectives, and mirrors consolidated group functions in the NZ ETS. |
| *Exemptions*<br>• Specified minor sectors exempt.<br>• Ministerial power to grant exceptions through an order-in-council. | • Minor sectors exemptions align with Partnership recommendations, and do not currently contribute emissions proportionately to the cost of administering their inclusion.<br>• The inclusion of Ministerial exemption powers allows for the exclusion of participants or classes of participants under certain circumstances which could not be captured in legislation. | *Effective* – Yes, they allow the system to manage the number of participants, with options for future inclusion.<br>*Practical* – Yes, keeps the costs of administration of the system lower<br>*Equitable* – Yes, only those businesses who farm for revenue from their farming business are captured in the levy system. |

*Levy settings (Refer to Section 3 of the 2023 Cabinet paper)*

| Proposed System Elements | Optionality / Analysis | Assessment Against Criteria |
|---|---|---|
| *Principles for setting the levy prices.*<br>• Primary consideration is emissions reductions: legislated targets and current national -level emissions budgets.<br>• Secondary considerations are availability and cost of mitigations; socio-economic impacts; best available information; emissions leakage. | • Original proposal considered single criteria of emissions reductions only.<br>• Final proposal aligns more closely with the Partnership recommendations requiring consideration of a broader range of factors with primary consideration on emissions reductions while also assessing the impact on viability of sector and rural communities. | *Effective* – Yes, considering a broader range of factors would achieve emissions reductions and maintain viability of the sector.<br>*Practical* – Neutral, as incorporates independent and sector advice across a range of factors although weighing multiple criteria could require difficult decisions for Ministers.<br>*Equitable* – Yes, the secondary factors address concerns about maintaining the viability of the sector. |
| *Process for updating the levy prices.*<br>• Prices will be set in regulations by Ministers.<br>• Set out for five years, review every three years.<br>• Set by Order in Council as recommended by the Ministers.<br>• Prices updated out of cycle if certain conditions met.<br>• Provisions for advice from the Commission. | • We propose that the Ministers of Climate Change and Agriculture are responsible for setting and updating the levy through regulations based on advice from the Commission and feedback from consultation with the agriculture sector and Māori and the wider public considering the above factors.<br>• Officials considered both yearly and three yearly price setting updates. Yearly would give more certainty for hitting targets, but three-yearly gives more certainty for farmers.<br>• Out-of-cycle updates also proposed to mitigate the risks of three-yearly updates.<br>• Commission's advice allows independent input into updates. | *Effective* – Yes, allows sufficient flexibility to update to reflect progress toward targets.<br>*Practical* – Yes, manageable frequency of updates.<br>*Equitable* – Yes, compromise between certainty for farmers and meeting targets. |

*Support to recognise emissions reductions technologies and practices, sequestration, and to participate in the pricing system (Refer to Section 4 of the 2023 Cabinet paper)*

| Proposed System Elements | Optionality / Analysis | Assessment Against Criteria |
|---|---|---|
| *Incentives*<br>• Incentive payments provided for mitigations on-farm.<br>• Uniform rate of incentive payment for all mitigation types set out in regulations.<br>• Incentive payment is a deduction from the levy bill.<br>• On-boarding processes for new mitigations set in regulations. | • A low price with incentive payments was selected over a high price with assistance.<br>• One purpose of the levy is to raise funds for payments to incentivise the use and uptake of emissions mitigation technologies and practices.<br>• Incentives as a deduction of a levy bill will make the uptake of mitigations more cost-effective. | *Effective* – Yes, a low price plus incentives can drive emissions reductions aligns with the emissions reduction plan for agriculture, which focuses on supporting producers to make changes and accelerating new mitigation technology.<br>*Practical* – Yes, approved technologies will be available to farmers at a fixed rate following a simple process for annual updates.<br>*Equitable* – Neutral, as incentive payments are available to all, but some mitigations may favour certain farm system types. |

| | | |
|---|---|---|
| *Sequestration*<br>• NZ ETS as long-term solution, with proposed related work programmes to achieve. If this long-term solution is not in place in 2025, an interim integrated sequestration in levy from 2025 using a declaration-based approach.<br>• Sequestration rates set in regulation by the Ministers.<br>• Sequestration payment is a deduction from the levy bill. | • NZ ETS considered by the government and Partnership to be the most equitable mechanism for recognising sequestration in the long term.<br>• Recognition for sequestration occurring on-farm was identified through consultation as a critical component of the pricing system as it provides a way to offset some of the emissions cost, particularly if no mitigations are available.<br>• A backup system to include sequestration in the levy from 2025 is included if the transition to the NZ ETS is not ready.<br>• Setting rates of reward for sequestration in regulations would allow considering fiscal sustainability and the revenue recycling strategy. | *Effective* – Neutral, recognising on farm sequestration from 2025 makes the pricing system more acceptable for farmers. However, as the payment will be deducted from the emissions bill, this may reduce the incentive to reduce gross emissions. Sequestration payments may also reduce funding available for mitigation incentive payments.<br>*Practical* – Neutral, there is still work to be completed to ensure sequestration can be integrated into pricing system by 2025 and into NZ ETS in long term, including defining categories, determining emissions factors for carbon sequestration, and terms and conditions for payment given it will be an interim system to start with.<br>*Equitable* – Neutral depending on which categories are recognised, sequestration payments may be available to some levy participants and not others. Transition of categories to the NZ ETS makes the system more equitable for non-levy participants. |
| *Offsetting levy payments*<br>• Sequestration and incentive payments may be larger than an individual's emissions bill. | • Aligned with Partnership recommendation that payments can be greater than the emissions bill at an individual level but not at a system level.<br>• Rates for sequestration and incentives will be set so as not exceed the revenue available at a system level. | *Effective* – Yes, if payments were capped, otherwise it may not result in gross emissions reductions.<br>*Practical* – Yes, Ministers have the power to cap payments in regulations if needed.<br>*Equitable* – Yes, supports a pricing system that is equitable to all participants |
| *Transitional assistance*<br>• None provided initially on the basis that the low-price design of the system with incentive, sequestration, and dedicated Māori funding reduces the impact of the sector.<br>• Whether further transitional assistance is required cannot be determined until initial levy prices are set<br>• The ability to provide transitional assistance will be enabled in secondary legislation, should this prove necessary. | • Options considered included differential pricing (a lower price for some participants based on criteria), phased in reporting and payment obligations (exclusion of some most-impacted sectors or participants to start), and targeted levy relief (deferrals or delays to payment due to exceptional circumstances) as well as using levy revenue to support transition to a lower emissions land use option.<br>• These options weren't progressed due to the complexity of designing and implementing a system requiring calls on a participant's economic viability.<br>• A low starting price with revenue recycling was proposed to alleviate the need for transitional support. | *Effective* – Yes, modelling indicates a low price plus revenue recycling can achieve targets and viability of sector.<br>*Practical* – Yes, simple to administer.<br>*Equitable* – Yes, most participants have equal opportunities for support, and Māori have a dedicated fund to support Treaty obligations. |
| *Dedicated Māori transition fund*<br>• A fixed amount of the revenue less administrative costs is ringfenced for Māori. | • A dedicated Māori transition fund aligns with Partnership's recommendation, but setting a fixed amount rather than reflecting levies paid by Māori landowners will better support transition to a low-emissions economy for Māori. | *Effective* – Yes, assists Māori to transition to low-emissions economy. May depend on what funds are used for.<br>*Practical* – Yes but is dependent on proportion set and assistance required.<br>*Equitable* – Yes, helps mitigate the adverse impacts on Māori due to historical barriers and complex land ownership structures. |

*Responsibilities (Refer to Section 5 of the 2023 Cabinet paper)*

| Proposed System Elements | Optionality / Analysis | Assessment Against Criteria |
|---|---|---|
| The implementation of the pricing system includes roles and responsibilities for Ministers, implementation agencies, the Climate Change Commission and an advisory board with sector and Māori representatives | Options considered included:<br>• Joint/single Ministerial responsibility<br>• Single/multiple implementation agencies<br>• Various combinations of independent, sector and Māori advisory roles | *Effective* – Neutral, joint Ministerial decision making in legislation is not recommended, all other functions have been clearly defined and allocated to the most appropriate agency.<br>*Practical* – Neutral, with responsibilities spread across Ministers, agencies, and advisory groups.<br>*Equitable* – Yes, as independent sector and Māori participants will all have a role in advising on the price system settings. |

*Operational requirements (Refer to Section 3 of the 2023 Cabinet paper)*

| Proposed System Elements | Optionality / Analysis | Assessment Against Criteria |
|---|---|---|
| *Introduction to pricing and reporting requirements*<br>• Reporting begins Q4 2024.<br>• Specified reporting and data requirements proposed.<br>• Flexible year-end reporting period. | • CCRA requires reporting to be in use by 1 January 2025.<br>• Data and reporting support the audit and verification process to ensure system integrity.<br>• Flexible reporting is more user-friendly for participants and was supported by Partnership. | *Effective* – Yes, supports participation in the system and system performance to achieve its purpose.<br>*Practical* – Yes, meets legislated timeframe.<br>*Equitable* – Yes, as it provides flexibility for participants to align with their existing reporting requirements. |
| *Compliance and enforcement*<br>• MPI to run compliance and enforcement with specified roles and requirements.<br>• Penalties, fees, and fines proposed.<br>• Legislative vs. regulatory components proposed.<br>• Criminal offenses proposed. | • MPI is the best placed in terms of expertise, capability, capacity, and existing relationships to lead and deliver the compliance and enforcement functions.<br>• We proposed an offences and penalties regime that is similar to the existing NZ ETS and SGG levy as laid out in the CCRA. This is because they serve a similar purpose and function to the agricultural emissions pricing scheme, namely that participants are required to calculate and pay for their emissions.<br>• We proposed criminal offences for serious acts of offending in alignment with the provisions of the CCRA – NZ ETS and SGG levy. | *Effective* – Yes, as MPI has the expertise and capability to accomplish the compliance and enforcement roles.<br>*Practical* – Yes, the choice of MPI makes sure that compliance and enforcement will be done in the most consistent and practical way possible.<br>*Equitable* – Yes aligning the offences and penalties regime with the CCRA ensures inter-sectoral equity. |
| *2030 review*<br>• Review conducted by MfE and MPI to consider whether the levy meets its purpose and if changes are needed.<br>• Consultation requirements proposed. | • Review after 5 years will help ensure it is fit for purpose, sustainable and appropriate to assist New Zealand in transition to low-emissions future.<br>• Consultation allows for those operating within the system and CCC to provide advice. | *Effective* – Yes, ensures system is on-track to assist New Zealand in meeting its legislated targets and budgets.<br>*Practical* –Yes, provides opportunity for system to be reviewed, and if necessary modified.<br>*Equitable* – Yes, sustainability of the system, which could include financial sustainability, social or economic impacts or other implications, will be considered in the review. |

## What are the marginal costs of Option 2A – Basic Farm-level Levy?

| Additional costs of the preferred option compared to taking no action (All costs are in 2030, except establishment costs which span 2023–25) | | | |
|---|---|---|---|
| **Affected groups** | **Comment** | **Impact** | **Evidence Certainty** |
| Regulated groups | Significant administrative and compliance burden on participants in the pricing system. | Operating: $17m pa | High |
| | Significant overall impact on the profitability and productivity of the agriculture sector. | $494–620m total loss in net revenue (2025–2030)<br>• Dairy: $250–295m<br>• Sheep & beef: $242–325m (depending on methane price[29]) | |
| Regulators | Setting up a new pricing system will have both one-off and ongoing costs and will require ongoing resourcing. (Note that some or all of these costs may be recovered from users.) | Establishment: $70m<br>Operating: $32m pa | High |
| Others (e.g., wider government, consumers, etc.) | Some costs could be passed onto consumers through increased product prices and/or reduced availability of product. | Low | Medium |
| | Related industries beyond the farm gate would be affected by reduced agricultural output – suppliers to farms, processors such as freezing works and dairy factories, and transport operators and higher value-added food manufacturers. | High – could be of a similar order of magnitude to loss in on-farm net revenue | Low |
| **Total monetised costs** | | **$540–669m** (excluding establishment costs, as these are covered by government) (depending on methane price) | |
| **Non-monetised costs** | | **HIGH** | **MEDIUM** |

*Table 12: Costs associated with Option 2A.*



[29] For prices B-D, but not including price A which does not achieve the domestic GHG target.

## What are the marginal benefits of Option 2A – Basic Farm-level Levy?

| Additional benefits of the preferred option compared to taking no action (All benefits are in 2030) | | | |
|---|---|---|---|
| **Affected groups** | **Comment** | **Impact** | **Evidence Certainty** |
| Regulated groups | Global perceptions that some NZ products are carbon-neutral secures premium in global markets increasing profitability of dairy and sheep & beef farms by 18%, for 10% of exports | $92–94m pa (depending on methane price) | Medium |
| | Reducing emissions will support avoiding the worst effects of climate change, which could significantly affect our ability to produce food. | | Low |
| Regulators | Will support meeting legislated targets. | $605m pa | Medium |
| | Over/under-achieving targets | –$51 to 71m pa (depending on methane price) | High |
| | Domestic reductions achieved decrease the volume of emissions that have to be purchased offshore to meet our NDC, avoiding the cost associated with this where these reductions are less expensive. | (Unquantified) | High |
| Others (e.g. wider government, consumers, etc.) | Some industries (arable, horticulture) will expand as a result of lower sheep and beef production and consequential land use changes. | $34–88m pa (depending on methane price) | Medium |
| | Reducing emissions will support avoiding the worst effects of climate change, which could significantly affect most aspects of life.<br>Shifting to low-emissions practices supports building resilience in our economy against changing consumer demands and emergent products and technologies. | | Medium |
| **Total monetised benefits** | | **$733–804m pa** (depending on methane price)[30] | |
| **Non-monetised benefits** | | **HIGH** | **MEDIUM** |

*Table 13: Benefits associated with Option 2A*

[30] These are the combined values of these components for the farm levy with low and high methane prices respectively, and not the column totals.

s 9(2)(b)(ii)

90. 

91. As with the results for all agriculture, there are no major differences between options. However, there is considerable inter-sectoral variation.

92. The key driver of this variation is differing levels of 'emissions intensity' between sectors. Both dairy and sheep & beef farming are projected to have similar emissions in the 'no pricing' baseline – 24 million and 26 million tonnes respectively. However, annual net revenue in 2030 is projected at $4.4 billion for dairy farming, compared to $1.4 billion for

[31] Equivalent calculations have been made for all other options. These show similar results to this table and have been omitted for brevity.

[32] The CBA estimates the Net Present Value (NPV) of costs and benefits, in real (inflation adjusted) dollars, using a discount rate of 5% (per standard Treasury guidance[24]) over the period from 2023 to 2035.

sheep & beef. Therefore, emissions for any given level of net revenue are much lower in dairy farming than for sheep & beef.

93. Emissions reductions under all options are primarily a result of reduced production. In the case of less 'emissions-intensive' dairy farming, this results in costs significantly exceeding benefits. While the modelled reductions in emissions and losses in net revenue are low in percentage terms, the low emissions intensity of this sector means that revenue losses significantly exceed the benefits of reduced emissions.

94. The biggest contribution to both emissions reductions (benefits) and losses of net revenue (costs) comes from sheep & beef farming. However, the opposite effect applies to what occurs in dairy; it is modelled to have much larger reductions in output, and the high emissions intensity means that the value of reduced emissions exceeds the losses in net revenue, resulting in positive benefit-cost ratios under all options.

95. The impacts in 'Other agriculture' are a result of land use changes and increased production in arable and horticultural sectors, resulting in modest increases in emissions and net revenue.

### Wider impacts

96. Direct costs to farmers and growers may have significant flow-on effects. There may be upstream impacts on production if farmers and growers reduce their inputs (e.g., agricultural contractors), and downstream effects if processors (e.g. meat works or dairy factories) have fewer products to process. 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.

97. There may be offsetting impacts associated with alternative land uses and the spending and employment associated with this.

98. With the considerable uncertainty about the impacts of emissions pricing on agricultural production, and the nature, scale, and location of wider impacts, any quantitative assessment of such impacts, including on Māori and rural communities, would be highly speculative. For this reason, we have limited our assessment to qualitative factors in the following two sub-sections.

99. Submitters, especially from the farming sector, expressed concerns about the loss of production expected to result from pricing emissions. They noted that impacts are likely to vary markedly between different farms and farm types, and referred to effects such as:

    a. negative effects on farmers' mental wellbeing;

    b. exit of young farmers from the farming industry;

    c. widespread change in land use from farming to forestry;

    d. loss of farm-related jobs and downturns in rural communities.

100. We note that the descriptions of impacts in the submissions were qualitative and anecdotal and did not provide any estimates of the scale of potential impacts. Nor was there any acknowledgement of offsetting impacts such as growth in other industries.

### Impacts on Māori

101. Most Māori submitters raised concerns that the proposals were not equitable for Māori. Many Māori submitters noted that Māori land's complex ownership structures must be

considered in the development of policies relating to climate change and emissions pricing. Māori landowners face multiple barriers to managing and developing their land, including land ownership and governance structures, access to capital and advice, and less productive land. These same factors will likely impact Māori landowners' ability to respond to an emissions pricing policy.

102. An emissions pricing system is likely to disproportionately disadvantage Māori landowners with flow on effects for Māori more broadly, particularly if there is no assistance in place to mitigate some of the impacts. In submissions, Māori indicated that they would face additional barriers without adequate and appropriate support systems in place and conveyed that representation in the system is critical to enable exercise of rangatiratanga, kaitiakitanga and manaakitanga by Māori participants. Draft modelling shows the price of methane emissions will drive reductions in production and stock numbers, and from this 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.

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

104. Reduced production resulting from an emissions pricing policy 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 impact Māori employment as approximately 28 per cent of meat processing workforce are Māori.

105. Looking ahead at the mitigations that are currently under different stages of development, these are more suited to dairy farmers than sheep and beef farmers, for example, EcoPond and Bovaer. With high rates of Māori-owned sheep and beef farms, this will impact on the ability of Māori farmers and landowners to take up mitigation incentives.

106. It is important to work with Māori landowners to understand how we can manage these impacts, to support a transition to a low emission, climate resilient future.

### Impacts on rural communities

107. The impacts will be greatest in areas where farming is a large part of the local economy. The impact may be magnified if job losses occur among people living in remote rural communities, with few alternative employment opportunities (and any new jobs are filled by people from provincial towns and cities).

108. Potential negative effects could include a significant change in spending power across rural communities, further de-population and impacts on community services, quality of living.

109. Feedback from consultation noted that the levy would not be felt evenly across the sector due to differences in farm profitability, but the decisions taken by each farm "aggregate up to community impacts."

110. Most sector submitters expressed concern the proposals would adversely affect or threaten the viability of rural communities. These submissions often noted the levy would reduce the number of jobs in rural communities, causing farm workers to leave, which,

in turn, would lead to the closure of schools and basic amenities, and then to further job losses.

111. Many sector submitters and some Māori submitters were concerned about the impact of the proposals on the mental health of rural people.

112. But it is also possible that some rural communities might benefit, for example from jobs arising from alternative land uses. Or businesses in other industries like tourism that are currently facing staff shortages may be able to expand through re-employing primary sector workers.

113. Affected rural communities with high Māori populations could suffer if people move to get alternative jobs. The social and cultural impacts of losing connection with ancestral whenua and whānau could contribute to loss of language and identity.

114. Potential mitigation measures may focus around two key themes: reducing the risk of widespread financial hardship; and building rural skills and support systems, for instance through extension services and programmes. The proposed pricing system includes relatively low levy prices and recycling revenue back to the sector.

# Section 3: Delivering an option

## How will the new arrangements be implemented?

115. The farm level pricing system will be introduced through a staged approach beginning with mandatory farm level reporting for eligible farmers and growers in Q4 of the 2024 calendar year. This first stage will facilitate operational delivery and sector readiness for eventual pricing.

116. In Q4 2025 of the calendar year farmers and growers face a price on their on-farm biological greenhouse gas emissions and recognised and rewarded for eligible sequestration and approved mitigation technology used.

117. 'Implementation Agency' in this section refers to MPI, MfE and IR, who will be responsible for implementing the levy system.

### Implementation arrangements for an Implementation Agency

118. The Implementation Agency and respective responsibilities will need to be outlined in primary legislation; the underpinning detail on the different functions will sit in secondary legislation alongside the broader operational policy framework.

119. Eight core functions of the Implementation Agency have been identified which will form the basis of an agricultural emissions pricing system:

    a. Participant registration & relationship management – this component of the system will deal with the registration and participant aspects of the system (farmer and growers, collectives). It will also be the interface by which the customer opts into the sequestration grant scheme and the incentive payments.

    b. Emissions calculation – this is the central emissions calculator where participant's emissions will be calculated. Where applicable, the sequestration and incentive payment approved mitigations will be factored in.

    c. Levy assessment & collection – using the participant's emissions calculation and the sequestration and incentive payment (if applicable), this function will calculate the levy to be paid and will collect the payment. It will also administer the rebates from incentive payments and the sequestration grants.

    d. Compliance monitoring and enforcement – this component includes the audit and verification sub-function (desktop and on-farm audits), and any compliance, monitoring and enforcement which is required as a result of this.

    e. Revenue recycling & re-investment – this includes the re-investment of funds towards the incentive payment rebates and sequestration grants, and the revenue recycling strategy and accompanying advisory body/bodies. This strategy will also set the framework for funding to support Māori landowners and agribusiness, as well as research directions.

    f. Policy management – this function includes the development and ongoing updates to the system policy settings, including levy price, sequestration, emissions reporting methodology, incentive payments, and the operational policy settings (on-boarding new mitigations, cost recovery, and compliance, monitoring and enforcement strategy).

    g. Governance and system stewardship – System monitoring, review, and evaluation against emission targets and budgets and wider socio-economic considerations.

h. Extension services – Underpinning supporting framework which ensures farmers have the information, tools, and advice needed to respond to a price on emissions.

### Governance of the pricing system

120. For our preferred option, Ministers are jointly responsible for oversight of the pricing system and spending of public money. We are expecting Cabinet to establish the System Oversight Board to provide advice to the Commission on levy settings and prepare a revenue recycling strategy.

121. The Commission will seek advice from the System Oversight Board and other affected parties on setting the levy rates.

122. Section 215 of the CCRA states that the System Oversight Board (Board) will be a non-statutory body that will provide Ministers a revenue recycling strategy; and will be consulted by the Commission on levy price settings, before the Commission provides its advice to Ministers.

123. The Commission will provide advice to Ministers on levy rates, after seeking advice from the sector and Māori (through a skills-based, non-statutory advisory board to be established). The System Oversight Board will also directly advise Ministers on the strategy for investment of levy revenue including incentive and sequestration rates. Māori representatives on the advisory board will be responsible for advising Ministers on ring-fenced funds for Māori.

### Information required from farm businesses in a farm-level pricing system

124. Farm businesses required to report their emissions within the emissions pricing system, and pay the levy, will need to register on the system. The obligation will extend to recording relevant farm data, submit emission reports using approved tools, and payment of the requisite levy.

125. The data required upon registering could include information on ownership, farm address, farm type/size, farming enterprise, stock type and numbers, farm map and GST number(s). This information would then be useful in aiding 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.

126. Participants will input farm information into the bespoke calculator on an annual basis. They will receive a notification directing them to do this.

### Farmer Collectives

127. Farmer collectives are being considered for implementation in 2025. Collectives offer a way for business owners to opt-in and collaborate with other business owners to report and pay for their emissions.

128. Collectives could also provide an opportunity for farmers to offset emissions through vegetation owned by another enterprise.

129. Te Aukaha, the Māori agribusiness work stream of the Partnership led by the Federation of Māori Authorities, identified collectives as a mechanism to reflect the fact that whenua Māori is owned collectively with interests in across multiple, potentially non-contiguous land blocks. Enabling the formation of collectives would support owners of whenua Māori to interact with the pricing system by reducing administration burden.

130. We recognise the importance of collectives but acknowledge that this may reduce the practicality of the basic farm-level levy in early years. We also need to test how collectives could impact the effectiveness of the pricing system at reducing emissions.

131. We are looking into simple solutions for supporting collectives (including those already used by government agencies) to interact with the farm-level levy that would allow collectives to be enabled from 2025.

### Compliance and enforcement

132. It is critical to the operation of the levy that participants comply with their obligations. To ensure a high level of compliance, we propose to establish a cost-effective compliance and enforcement regime that is similar to that under the NZ ETS and Synthetic Greenhouse Gas Levy (SGG levy).

133. The compliance and enforcement regime needs to ensure a high level of compliance and enable appropriate action to address non-compliance. An effective compliance and enforcement regime will give legitimacy to the scheme, promote equity and fairness by ensuring all participants are fulfilling their obligations, and ensure expected revenue is collected.

134. The implementation agency will be responsible for ensuring levy payers comply with their obligations and take any necessary enforcement action. To support this, key powers and functions will be needed. These include:

    a. Powers to appoint enforcement officers who can inquire with levy participants to verify compliance;

    b. Enabling third-party verification processes through regulations; and

    c. Powers to amend emissions returns or make default assessment in cases of non-reporting.

135. An offences and penalties regime will incentive compliance, while enabling appropirate enforcement action to be taken in cases of non-compliance. A range of tools will be provided to the implementation agency to enforce obligations:

    a. Establishing criminal offences for serious non-compliance with obligations (e.g. knowingly providing false information);

    b. Enabling the use of infringement offences to punish lower level non-compliance; and,

    c. Administrative penalties for reporting errors (including non-reporting) that align to the size of the error, and for non-payment.

136. There will be costs associated with administering the farm levy, which could be funded from Crown revenue, revenue collected from the levy, or via separate fees. We are therefore considering enabling cost recovery for the functions involved in running the agricultural pricing system within legislation. If cost recovery is implemented, it would be applied through regulation and subject to consultation before fees are set or changed.

### Is implementation of a farm level pricing system by 2025 feasible?

137. The Government enshrined implementation milestones in the CCRA. These milestones, between 2020 and 2025, prepare the agricultural sector for calculating and reporting its annual emissions. The milestones – and the assessment this year by the Commission of progress towards them – are set out Table 15 on the following page.

138. There is no longer sufficient time to legislated and implement a pricing system by the 1 January 2025 deadline previously envisaged. The intention is now to implement a farm level pricing system in quarter four 2025, with mandatory emissions reporting beginning from Q4 2024. This mandatory reporting will help ensure sector readiness to engage with the pricing system once it takes effect.

| | Milestone | Due Date | Status |
|---|---|---|---|
| 1 | For 25% 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<br>61% farms reached |
| 2 | 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 |
| 3 | 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 |
| 4 | 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 |
| 5 | Guidance is provided to farmers on how to measure and manage emissions through farm planning | 1 January 2021 | Complete |
| 6 | A quarter of farms have a written plan in place to measure and manage their emissions | 1 January 2022 | Not complete<br>21% farms reached |
| 7 | All farms have a written plan in place to measure and manage their emissions | 1 January 2025 | Very likely will not be met |

*Table 15: Implementation milestones and due dates from Schedule 5 of the CCRA*

### Increasing farm and sector readiness in implementation

139. Implementation planning will need to address how the capability and capacity of the agriculture sector will increase to support farms to meet requirements, and to ensure MPI can enforce requirements.

## How will the new arrangements be monitored, evaluated, and reviewed?

140. The proposed farm-level pricing system is designed specifically for the agriculture sector to be practical to implement and to ensure it is most effective at reducing emissions in line with Aotearoa New Zealand's emissions reduction targets. The system is also designed with a view to maintaining a viable and productive agriculture sector.

141. There will be a role for the Commission in monitoring the overall successes of the system as Section 5ZJ of the CCRA requires the Commission to monitor progress towards emission budgets, of which this pricing system will be key.

142. To ensure that the agricultural emissions pricing system is fit for purpose, sustainable and appropriate to assist Aotearoa New Zealand in the transition to a low-emissions future, a legislated 2030 implementation review is proposed. The Implementation Agency would be responsible for conducting the review.

143. An implementation review in 2030 will provide an opportunity to consider:

    a. The extent to which agricultural emissions have reduced;

    b. The sustainability of the system, which could include financial sustainability, social or economic impacts, or any other implications;

    c. Opportunities to enhance or improve the system.

144. As part of the review the Implementation Agency will seek information and advice from the agricultural sector, Māori, and the Commission.

145. Price pathways for biogenic methane and long-lived gases will be set for five years with a review after three years. Annual monitoring of emissions will inform the price setting and identify any significant variances that could trigger an earlier review.

146. The information the Implementation Agency receives from farmers and growers, the results of its monitoring and enforcement actions, and the uptake of revenue recycling programmes would also support the monitoring and evaluation of the policy.

147. A revenue recycling strategy will be developed outlining spending priorities to mitigate agricultural emissions and operate the system. The strategy would include incentive and sequestration payments, and a dedicated fund for Māori landowners. The rate received by farmers and landowners as incentive payment for the uptake of approved actions that reduce emissions, such as the adoption and use of methane inhibiting technology will be periodically reviewed. These will include payments or credit for on-farm vegetation which are not eligible for registration in the NZ ETS.

148. The Government and the agriculture sector will jointly develop a sequestration strategy to determine what sequestration will be recognised in 2025. The strategy will recommend how sequestration is to be accounted for and rewarded within the pricing system and the process and criteria for any transition of vegetation categories to the NZ ETS.

149. Specialised climate-focused services will complement wider efforts by industry and the Government to support whole-of-system farming change. The regulator will facilitate and enable extension services/programmes to reduce the risk of widespread financial hardship and building rural skills and support systems, so that farmers can carry out to mitigation measures.

150. There are significant fiscal risks in setting the levy, in that the forecasting of the sequestration and incentive payments is quite uncertain, meaning that while we will set the levy and payments with the best available information in mind, there are risks that the levy revenue may not cover all the payments. For example, for one scenario of the cost of the low and high estimates of sequestration uptake range from e.g. $ 50m to $300m. There are several mitigations for this risk, including setting a higher levy and being conservative with pay-outs.

# Appendix One: Other System Design Elements

151. A range of other system design elements were considered throughout this policy proposal, which do not constitute options in their own right but nevertheless were significant areas of work that officials assessed against our core criteria.

152. There are four key additional elements either not progressed, or are still under consideration for whether they can be incorporated into the initial system or should be considered possible improvements to the system over time:

    a. Structured assistance;

    b. Comprehensive reporting.

### Structured Assistance

153. Structured assistance has *not been progressed* within the final options.

154. Structured assistance is a potential mechanism for returning funds to farmers in a way that supports them to face and appropriately respond to the price on their emissions, without weakening the price signal necessary to achieve emissions reductions. Essentially, farmers would receive the full marginal benefit for every unit of reduction that they make or taken on the full marginal cost for every unit of emissions that they increase, but the overall emissions bill would be offset with a rebate that softens the financial impact on the farm's viability.

155. Under any NZ ETS options, free allocation functions as a form of structured assistance, so this is considered built into the option.

156. For an alternative pricing system, the Partnership and government considered a range of methodologies for structured assistance, which were then assessed by the Commission. Their advice on assistance (which also included other forms of assistance) was provided to Ministers as the report linked in *Table 1*.

157. Several methodologies discarded early on included:

    a. A proportional discount, where the price is simply lowered by a significant amount. This does not preserve a strong incentive, though the concept of using a low price with other system elements driving reductions continues to exist in all of the alternative pricing system options considered by this SAR.

    b. Grandparenting, where farmers receive a rebate on the basis of their emissions reductions compared with a fixed historical year. This option creates a very strong incentive to reduce emissions, but comes with significant equity issues, especially for early adopters who cannot be recognised for past reductions and for Māori farms who have not had the same level of opportunity to intensify their land in the past unlike many other groups within the agricultural sector.

    c. Rolling average, good management practices, and target-based rebates were also all considered. The Commission's report sufficiently covers the flaws in these methodologies.

158. Two key methodologies were designed in much more detail, and remained viable candidates for a significant portion of the policy design process:

    a. Output-based rebates reward farmers on the basis of how emissions efficient they are per unit of product. It strongly rewards efficiency gains, and could be implemented in a basic form with minimal additional reporting. However, achieving

the full benefit of this methodology would require much more complex reporting. An output-based approach also creates equity issues between sub-sectors, as mitigations available to dairy often contribute to efficiency gains, but most of the already-limited mitigations available to the drystock sector would not be picked up within the benefit of this methodology.

b. Carrying capacity (or land-based) rebates[33] reward farmers on the basis of how emissions efficient they are per hectare (within a range of land-use categories). It strongly rewards both deintensification and absolute emissions reductions. However, it could not be implemented without significant additional investment and much greater reporting complexity. This methodology builds on the concept of Land-use Classes (LUC), but to be effective and accurate would require a fit-for-purpose land-use map, which officials do not consider feasible in the near future. A carrying capacity approach also creates equity issues between sub-sectors, as dairy farms can best achieve emissions reductions while remaining viable through efficiency gains within their intensive systems, which would be disincentivised within this methodology.

159. Ultimately, officials continue to see structured assistance as useful tool for achieving emissions reductions, but this does not sufficiently stack up against the complexity and equity issues and other significant trade-offs required for structured assistance to function.

160. The on-farm technology and mitigation incentives approach outlined under the options considered in this SAR effectively takes the place of structured assistance, as a way of recycling funds back to farmers to simultaneously incentivise emissions reductions and soften the financial impact of the price.

161. Other approaches to assistance (such as levy relief or other funding or support provided on a conditional basis) are continuing to be explored by officials to mitigate the most strongly felt impacts of the pricing system, such as on Māori agribusinesses, as recommended by the Commission.

### Comprehensive Reporting

162. Comprehensive reporting has *not been progressed* within the final options. However, it is *still being* considered as a possible improvement to the system over time.

163. A comprehensive reporting system provides for farmers to be recognised for a wider range of mitigations on-farm, and to better understand their emissions footprint and where reductions can be achieved. It is referred to by the Partnership as the 'detailed method,' and could include farm-systems improvements (e.g. improved animal genetics, forage type, farm-specific management, timing of operations), efficiency gains not related to specific mitigations, and land-use change (for example, from pasture to arable or horticulture).

164. Comprehensive reporting is not considered practical to implement by 2025 as more work will be required for detail in regulations and for integration with the single, centralised calculator in the IT system.

165. There is also a question of the cost-benefit of comprehensive versus simple reporting system. Increasing the complexity of reporting comes with significant cost, including to

[33] Carrying capacity or land-based assistance provides rebates on the basis of the natural productive capacity of the land.

farmers – particularly sheep and beef. However, it has potentially diminishing impacts on the ability to recognise and reward meaningful reductions.

166. The availability of comprehensive reporting could create equity issues, as some sub-sectors, such as the drystock sector, do not have robust systems to collect the data required and would need to invest more time compared to dairy sector participants in order to receive any benefit.

# Appendix Two: Recognising sequestration options

## Inclusion of additional categories in NZ ETS

167. The Partnership recommended for the NZ ETS be improved and updated to allow more vegetation categories. The NZ ETS is the most appropriate mechanism to reward all forms of eligible sequestration from vegetation. Having one system that recognises sequestration for all landowners in Aotearoa New Zealand is a coherent, efficient, and equitable approach.

168. A key barrier to recognising non-forest sequestration categories in the NZ ETS is the gap between New Zealand's Greenhouse Gas Inventory and our target accounting. Currently, forestry is the only form of sequestration that is eligible to be recognised in the Nationally Determined Contribution (NDC) accounting and the NZ ETS.

169. Cabinet has therefore agreed in-principle to expand the NDC accounting to recognise a wider range of non-forest removal activities, and to be rewarded alongside forestry as part of New Zealand's climate change response. This will help alignment of emissions accounting between the NZ ETS and international targets.

170. Another significant barrier is the administrative and fiscal bottleneck presented by the current system, where the burden of proof falls on the government to do the research and development required to bring additional forms of sequestration into the NZ ETS.

171. To enable the long-term goal of including on-farm vegetation in the NZ ETS, in August 2023 Cabinet agreed to develop and implement an innovation pathway with the aim of having this in place by 2025, which includes:

- drafting legislation to enable new removals activities to be included in the ETS or other appropriate mechanism,
- developing the criteria and expectations for the research and evidence required for market entry, to provide certainty for investors; and
- establishing the process and operational system to test and verify this evidence.

172. Cabinet recognised that it would be ideal for the necessary legislation to be in place in 2025 (in time for when the pricing mechanism comes into effect). However, if the innovation pathway is not in place by 2025, the intention is to reward certain categories of on-farm sequestration in an interim system, as set out below.

## Interim sequestration system via the farm level levy

173. To be recognised for on-farm sequestration, farmers and growers would need to complete a declaration while inputting their emissions and sequestration. Scientifically robust vegetation categories that can be included in Aotearoa New Zealand's international target accounting will transition to the NZ ETS immediately.

174. Under this approach, levy funds will be used to pay farmers for eligible sequestration. Legislation would specify that funding these categories of sequestration is a purpose of the levy.

175. To determine the sequestration component of the levy, legislation and regulation would need to define the eligible vegetation, the rates of sequestration associated with this vegetation, the price per tonne of carbon sequestered. This option allows individual farmers to offset their methane and nitrous oxide levy bill with these categories of carbon sequestration.

| Option | Effective | Practical | Equitable |
|---|---|---|---|
| Inclusion of additional categories in NZ ETS | Is likely to be more effective at reducing agricultural emissions as levy revenue from an agricultural pricing system can fund more activities to reduce gross agricultural emissions, instead of funding sequestration. | Would require a significant legislative and policy process to add and alter the extra categories.<br>For small areas of vegetation, the NZ ETS mechanism becomes less practical because the NZ ETS involves trading in NZUs, has a high level of assurance for sequestration occurring, and has higher liability provisions for destroyed vegetation. | Recognition of this vegetation in the NZ ETS does not restrict access to reward only levy payers and is therefore more equitable to general Aotearoa New Zealand private landowners. |
| Sequestration as a use of funds raised by the farm-level levy | This option will reduce the effectiveness of the farm-level levy as it directs funds away from activities that reduce methane and nitrous oxide emissions. If higher levy rates can be secured, this impact on effectiveness will be avoided.<br>This option does not provide as strong of an assurance of the permanence of carbon sequestration as the other two mechanisms analysed here. Due to the lower assurance and expectation around permanence, the rate of reward will be lower than in the NZ ETS to reflect this. | | Only levy payers would have access to this sequestration reward, it is not an equitable option to private landowners who do not pay the levy. This is somewhat mitigated by the fact the reward is paid with levy revenue.<br>It is proposed that Māori landowners who are part of a collective (as a levy payer) will also have access to this sequestration reward. |

# Appendix Three: Comparison of elements across options

| | **Option 1** Processor-level Pricing in NZ ETS | **Option 2A** Basic Farm-level Levy (Government proposal) | **Option 3** Partnership's Farm-level Levy | **Option 4** Farm-level Pricing in NZ ETS |
|---|---|---|---|---|
| System | Processor-level NZ ETS | Farm-level Levy | Farm-level Levy | Farm-level NZ ETS |
| When would it start | 01 January 2025 | Q4 2025 | Later than 01 July 2025 | Considerably later than 01 January 2025 |
| Point of obligation | Processors | Farmers & growers | Farmers & growers | Farmers & growers |
| Emissions calculation | NZ ETS reporting system | Simple calculator | Simple calculator in 2025 and more detailed in 2027 | NZ ETS reporting system |
| Emissions price | NZU market price | Unique price for both biogenic methane and long-lived gases set as low as possible to achieve the emissions reductions required to meet our targets and be sufficient to support the uptake of mitigation technologies, with additional factors also taken into account. | Long-lived gas price set to fund sequestration and admin costs.<br><br>Unique methane price set through advisory process and approved by Ministers. | NZU market price |
| Reduction incentives | Cost of emissions passed onto farmers, incentivising lower production.<br><br>On-farm incentive regime that pays for mitigations and technology uptake | Direct signal to farmers through price on emissions<br><br>On-farm incentive regime that pays for the uptake of approved mitigations and technology, and in future, on farm practices | Direct signal to farmers through price on emissions<br><br>On-farm incentive regime that pays for the uptake of approved mitigations and technology | Direct signal to farmers through price on emissions<br><br>Possibility of on-farm incentive regime |
| Financial assistance | 95% free allocation | Low price plus revenue recycling<br><br>Levy must be self-funding and sustainable | Low price plus revenue recycling<br><br>Levy relief available | Possibility of 95% free allocation regime |
| Sequestration | NZ ETS forestry | Sequestration payments for eligible vegetation that is not eligible for the NZ ETS until these categories are transitioned to an appropriate long term sequestration reward scheme via the innovation pathway. | Sequestration payments integrated into levy for a broad range of vegetation | NZ ETS forestry |
| Revenue recycling | General pool of revenue raised from the NZ ETS | Self-funding and covers system administration, on-farm incentives and sequestration, a dedicated fund for Māori landowners, and other priorities identified | Funds system administration, on-farm incentives and sequestration, a dedicated fund for Māori landowners and other priorities identified | General pool of revenue raised from the NZ ETS |

| | | | | |
|---|---|---|---|---|
| | | through the revenue recycling strategy. | through the revenue recycling strategy. | |
| Governance | Existing NZ ETS governance structures | Ministers govern system with advice from Climate Change Commission and advisory board with sector and Māori representatives | Sector led governance structures to advise on price, progress toward farm-level pricing, revenue use, etc | Existing NZ ETS governance structures |
| Transitional options | Possible long-term transition to NZ ETS at the farm-level | Effectiveness to be improved over time | Short term implementation to a more detailed system by 2027 | N/A |