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**SUBMISSION**

on

**2021 Draft Advice for Consultation**

to

**He Pou a Rangi, Climate Change Commission**

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Date: 23 March 2021

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## Introduction

1. Plants use nitrogen to build amino acids and protein. In livestock systems, when ingested, some of this nitrogen may be returned directly via urine, dung or collected and spread as effluent. Where products from the farm system are removed and sold, the nutrients are lost from the farm system and must be replaced. Some nitrogen in a pasture system is recovered from the atmosphere by legumes, such as clover. Otherwise, fertilisers are necessary to replace nitrogen (and other nutrients). Nitrogen fertiliser is also applied strategically to provide nitrogen when clover is unable to produce enough nitrogen required for peak periods. If nutrients are not replaced and there is a nutrient deficiency in the farm, plant growth will be reduced. If the deficiency is severe enough crop failure results.
2. Synthetic nitrogen fertilisers are one source farmers and growers can use to replace lost nitrogen. Nationally, there is insufficient compost and organic nitrogen fertiliser available to meet the nutrient requirements using organic sources alone. In fact, without synthetic nitrogen fertiliser, it is estimated that New Zealand agricultural exports would halve. New Zealand gross outputs would drop by \$19.8 billion (see figure 1). Eliminating the use of synthetic fertiliser in New Zealand would risk crop failure for many crops such as vegetables and cereals.
3. Agricultural emissions are part of biological systems and it is not possible to eliminate greenhouse gas emissions from agriculture. Policy which drives absolute reductions and increased efficiencies in emissions from food production is necessary. We commend the He Pou a Rangī, the Climate Change Commission (the Commission) for the set of high-level policy proposals they have developed.
4. While nitrogen fertiliser is a key component of agricultural productivity, it is a small part of the overall current New Zealand total greenhouse emissions, at 5.7 percent of agricultural emissions. While the proportion is small, understanding the nutrient cycle of biological systems is key to the management of biological emissions in agricultural systems. The fertiliser industry has a key, pan-sector role to play in assisting farmers to manage nutrient cycling across all farm types - dairy, beef & lamb, arable and horticultural farms. The industry has the systems and expertise to aid agriculture's transition to a lower greenhouse gas emissions future while enabling food security.
5. Globally, good systems for management of biological emissions will be very important, and this is where New Zealand can make a key contribution towards addressing atmospheric temperature rise. If New Zealand attempts to simply transition entirely away from agricultural emissions, without enabling on-going agricultural production and food security, New Zealand will at best contribute to reducing our 0.17 % contribution to global emissions. In contrast, developing and demonstrating solutions – including policies – for efficient agricultural production which contributes to food security with low emissions, can contribute to New Zealand's domestic solutions and an international pathway for significant reduction in greenhouse gas emissions.
6. New technologies and mitigation options will be necessary to achieve significant reductions in emissions. We could accelerate these efforts, if the Government is able to progress regulations that provide a pathway to market for new emissions reduction technologies.

## About the Fertiliser Association of New Zealand

7. The Fertiliser Association of New Zealand (the Association), is an industry association funded by member companies, to address issues of common public good. Member companies include Ballance Agri-Nutrients Ltd and Ravensdown Ltd. Both are farmer co-operatives with some 45,000 farmer shareholders. Between them, our members supply over 98% of all fertiliser used

in New Zealand. As co-operatives, they are not driven by maximising the value of product sales to farmer shareholders, but by delivering best value to farmer shareholders.

8. Our members currently have the largest team of on-farm advisers – around 200 – of any of the primary sector groups. Their staff are all well trained, assisting farmers and growers to make informed, evidence-based decisions for their farm systems.
9. The Association member companies have invested significantly in products, systems and procedures which support responsible nutrient management to support a viable primary industry within environmental limits. Combined, they have invested \$28 million in research in the past 3 years.

# THE VALUE OF NITROGEN FERTILISER TO THE NEW ZEALAND ECONOMY

The Fertiliser Association of New Zealand has commissioned a study to analyse the costs to the primary sector, both at the farm gate and to the wider New Zealand economy, associated with removing nitrogen fertiliser or using a substitute. For pastoral farms this includes use of supplementary feed. Here is a summary of the key findings.

## Financial impact at the farm gate

While the removal of nitrogen as a farm input would reduce (by a small amount) farming impacts on water quality and GHG emissions, at the farm gate this is estimated to cost:



## On-farm impacts (\$million)

	SHEEP/BEEF	DAIRY	PERMANENT HORTICULTURE	VEGETABLES AND ARABLE	TOTAL
Without N fertiliser	-\$30	-\$824	-\$479	-\$351	-\$1,684
Without N fertiliser, plus substitution via imported feeds and composts	-\$238	-\$1,213	-\$18	-\$637	-\$2,105

## Impact on the New Zealand economy

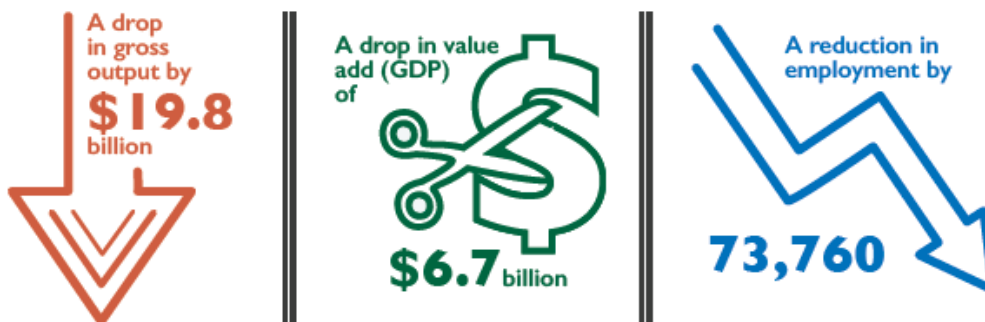


Figure 1: Value of Nitrogen Fertiliser. Source: Journeaux, P., Wilton, J., Archer, L., Ford, S. and McDonald, G. (2019). The Value of Nitrogen Fertiliser to the New Zealand Economy, [www.fertiliser.org.nz](http://www.fertiliser.org.nz)

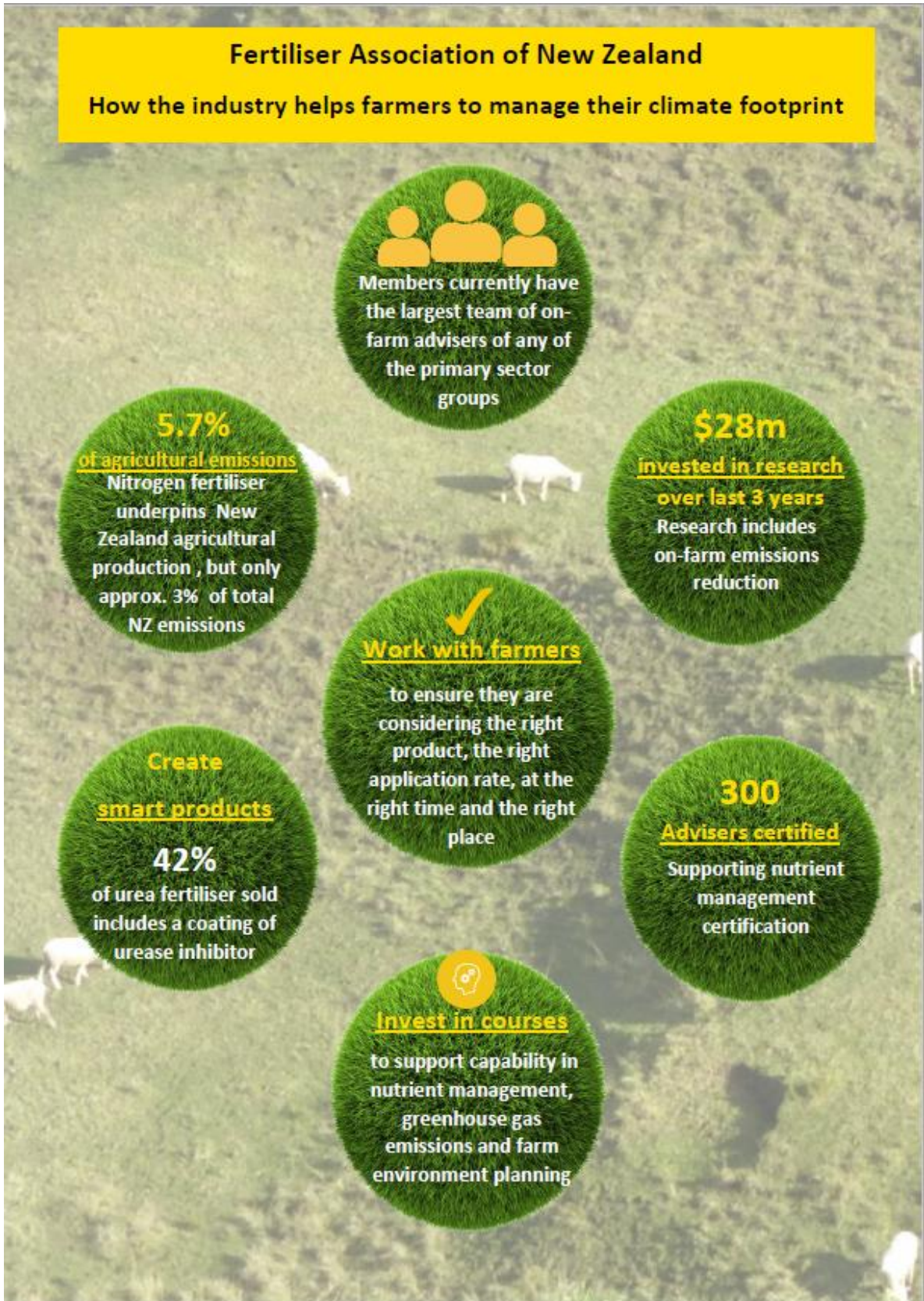


Figure 2: Fertiliser industry systems and expertise in helping farmers to reduce greenhouse gas emissions



## Key Submission Points – innovation pathways to market

10. We are pleased to see the Commission identify the lack of regulatory pathways for new agricultural emissions reduction technologies as a key issue. (Section 6.1.3: *time critical necessary action 4e*).
- 11. The lack of regulatory pathways for new agricultural emissions reduction technologies is a significant barrier to investment in innovation. The Government urgently needs to progress regulations to make sure the use of approved, effective mitigation products does not become a barrier to reducing agricultural emissions.**
12. The lack of updated regulations poses two key issues. It:
  - a. **Prevents investment in the development of new agricultural technologies.** If there is no pathway to market, firms will struggle to justify investment.
  - b. **Prevents conversations with our trading partners** about how New Zealand will ensure new technologies are safe for consumers of our products. Until the regulations are settled, we cannot start to give comfort to our trading partners about our approval approaches around new technologies (e.g. codex standards).
13. Progressing this quickly is a critical step in beginning a process of investment that could deliver solutions for NZ farmers and growers.
14. The Government consulted on this in February 2020. Therefore, we believe these changes, which can be made through an Order in Council, can and must be made earlier than 31 December 2022. We believe this work can and should be prioritised and completed by the end of 2021.
15. Much work has been done already. Our members, Ballance Agri-Nutrients and Ravensdown, are major investors in innovation. Combined, they have invested \$28 million in research in the past 3 years. The industry could contribute even more to emissions reduction solutions if this barrier was addressed.

## Further Submission points

16. Support the approach the Commission has taken to emissions budgets, pathways, and the level of detail of the emissions reduction plan. The draft report provides a helpful set of recommendations for the Government. It was useful that the Commission released the data sitting behind its analysis.
17. Support the pragmatic approach to setting budgets based on current, known mitigations. We know there are emerging options, but the budgets represent pragmatic targets based largely on what we know to be available. We acknowledge that this will be challenging for many individual farms. However, these budgets reflect the commitment of the sector to transition to a lower greenhouse gas emissions future in a productive and profitable way.
18. Enduring signals are important for business planning, investment, and behaviour change. Emissions budgets provide this. We cannot predict the future, but the proposed budgets give an understanding of what is possible and what should be delivered.
19. Policy predictability is also important. Businesses' investments will be made in the context of investment cycles and replacement rates for infrastructure. Setting forward budgets and signalling medium-term policy direction is welcome. In this context we encourage the Government to signal its intention to adopt both the recommendations for the first budget

period *and* the necessary actions. This would provide consistent and enduring signals that would support business decision-making and investments.

- 20. Bipartisan support is a key way to provide consistency for the long term planning decisions.
- 21. Urgent action is needed to 'bend the curve'. The Association supports the Commission's approach of identifying time-critical policies and other necessary policies to enable support for farmers and growers to work towards the required targets, while ensuring security in food production. Our view is that we need increased emphasis on the process for reductions. Excessive focus on the emissions targets distracts focus away from the processes required to achieve reductions.

### Some specific comments

- 22. We support the separation of long-lived gases and biogenic methane. The Association would like to see further commentary and analysis of options to reduce nitrous oxide. Nitrous oxide (~25% of agricultural emissions) is a long-lived gas, and a primary output from animals and fertiliser. While fertiliser is a small component of agricultural emissions (5.7%), we are committed to finding ways to reduce emissions where possible. There was little commentary on these emissions or opportunities or policies to reduce them. Methane is undoubtedly important, but all emissions, particularly long-term emissions, need to reduce.
- 23. The Association welcomes the Commission's consideration of how solutions for emissions reductions may have a negative impact on water quality. We support the need for integrated solutions across emissions mitigation, climate resilience, water quality, land-use and biodiversity. A cohesive government policy approach across climate and water polices is also needed to ensure that signals reinforce each other.

### Consultation question 16: Do you support the package of recommendations and actions for the agriculture sector? Is there anything we should change, and why?

- 24. We have focused on this question as we see it as the most critical for the agricultural sector, and it is where we can make the most contribution.
- 25. The Association is pleased to see the holistic approach the Commission has taken to the development of policy recommendations. For example, including policies that are not traditionally associated with climate change but that will be essential in supporting change on farm and vibrant rural communities, such as internet connectivity.
- 26. The Association supports the high-level policy proposals for agriculture, with some amendments, as outlined in the tables below.

Table 1: Views on elements of the Commission's proposed 'time critical necessary action 4', Reduce biogenic agricultural emissions through on-farm efficiency and technologies (Section 6.1.3)

Commission proposal	Position	Comment
a. Ensure that effective mechanisms are in place so that the <b>plans, advisory and guidance tools</b> developed by He Waka Eke Noa will endure beyond 2025 and can support achievement of the emissions budgets and targets.	<b>Support</b>	The Government and agriculture industry will need a full, well-resourced implementation process to deliver the decisions that He Waka Eke Noa make. A key component of this will be quality on-farm advice, particularly as farmers and growers seek an integrated approach to reduce emissions, and reduce risks to waterways, use water efficiently,

		<p>protect biodiversity and ensure their farm systems remain climate resilient.</p> <p>The fertiliser industry is well placed to support farmers in addressing nitrous oxide emissions targets as part of the wider farm environment planning. The fertiliser industry is uniquely placed in terms of the number of trained staff with nutrient management expertise and the number of staff nation-wide with long-term one-to-one business relationships across all agricultural sectors. The fertiliser industry is also unique in that verified mitigation options for nitrous oxide mitigations from fertiliser as well as from livestock urine patches were delivered but voluntarily withdrawn and subject to market acceptance. The industry has invested in tools for assessing and reporting nutrient cycling on farms, including greenhouse gas emissions at farm scale. Existing nutrient management certification, including greenhouse gas endorsement is available through industry schemes and is poised for further growth and development. Building advisory capability will require consistent, enduring government approach with clear signals.</p>
<p>b. Drawing on the work of He Waka Eke Noa, <b>decide in 2022 on a pricing mechanism for agricultural emissions</b> as is required by legislation that is suited to the characteristics of the sector and capable of supporting achievement of the emissions budgets and targets.</p>	<b>Support</b>	<p>The Association supports on-farm emissions pricing that is effective and supports farmer decision-making. To reduce on farm emissions, the point of obligation (cost) for those emissions must be visible to the farmers. To succeed in addressing behaviour change the cost must be applied on-farm and the farmer must have options that allow and incentivise mitigations.</p> <p>If the emissions price is at a processor level it provides administrative ease but will not incentivise emissions reductions or efficient production. It essentially becomes an additional fixed cost on production with little impact on emissions.</p>
<p><b>c. Ensure the Rural Broadband Initiative is resourced and prioritised</b> to achieve its 2023 target, so that farmers have access to data and information to support decision making and the ability to practice precision agriculture.</p>	<b>Support</b>	<p>Technologies that support precision agriculture, improved efficiencies and some decision-support and reporting tools may require reliable internet access. Our farmers and growers need to be able to reliably access these tools.</p>
<p><b>d. Review current arrangements and develop a long-term plan for targeted research and development of technologies</b> (including</p>	<b>Support</b>	<p>Government funding needs to be more coordinated, so we get practical outcomes from the money invested. New Zealand needs to accelerate the development, commercialisation, and delivery of mitigation options. The</p>



evaluating the role of emerging technologies such as genetic engineering) and practices to reduce biogenic emissions from agriculture		Government needs to explore how it works with agricultural partners intentionally. The Government should consider how to work strategically and effectively with private sector partners to most rapidly deliver new technologies.
<b>e. Review and update processes and regulatory regimes</b> to ensure that new emissions reducing technologies and practices can be rapidly deployed as and when they are developed.	<b>Support</b>	<b>This is a critical, high priority need. See paragraphs 10-15 and proposal d. above.</b> <b>Lack of regulatory pathway is barrier to investment in innovation. Ensuring conversations happen to make sure the use of approved, effective mitigation products does not become a barrier to market. Lack of regulatory pathway prevents us starting the conversations that need to happen on an international level about ensuring markets are comfortable with the NZ approach (e.g. codex standards, trade)</b>
<b>Include a new recommendation f.</b> Invest in information provision such as <i>ag matters</i> so there is one single portal for information on agricultural mitigation options.	<b>Proposed</b>	<i>Explanation: there is so much information out there and it quickly gets out of date. There are often news articles about new technologies emerging, and it's hard to know what information to trust. The Government-supported "Ag matters" website is a great start, but some information is out of date already and the site could be improved to provide an easier user experience.</i>

Table 2: Views on the Commission's proposed necessary Actions 11, Create options for alternative farming systems and practices, (Section 6.1.3)

<b>Commission proposal</b>	<b>Position</b>	<b>Comment</b>
Accelerating investment in high resolution, consistent, publicly available nationwide land and climate information, and decision-making tools and processes, to better inform local and national land use decisions.	<b>Support</b>	The direction of this investment should be set by the long-term research plan.  We also note this could have significant co-benefits and should be developed with water, soil quality, climate resilience and biodiversity outcomes in mind. It should be developed and delivered in partnership with Māori.
Supporting deployment of the systems and infrastructure needed for alternative farming systems and products.	<b>Support</b>	The development of alternative farming systems and products should be market-led supported by robust research to benchmark emissions.
Prioritising initiatives to reduce barriers and enable international market access for proven low emissions food and fibre products.	<b>Support</b>	The development of beneficial farming systems and products should be market-led supported by robust research to benchmark emissions.

### Progress indicators:

27. The Association is interested to understand why there are only two progress indicators, despite the number of time-critical necessary actions the Commission has identified.
28. The Association does not support the timeframe for the proposed indicator: *Government to have, by 31 December 2022, reviewed and amended processes and regulatory regimes for new emissions reducing technologies and practices*. As described in paragraphs 10-15, the Government consulted on options to progress these regulations early last year. We believe a clear regulatory pathway for new emissions reduction technologies can and should be prioritised and completed by the end of 2021. Early implementation is essential given the long lead time for development and commercialisation of new emissions reducing technologies and practices and the emissions targets for 2030, being less than 10 years away.

## Responses to remaining consultation questions

### Approach and emissions budgets

*Q1. Do you support the principles we have used to guide our analysis?*

Fully support. That is, principles which align with 2050 target, focus on decarbonising the economy, creating options, avoid unnecessary cost, transition in an equitable and inclusive way, increase resilience to climate impacts and leverage co-benefits.

*Q2. Do you support budget recommendation 1? Is there anything we should change and why?*

Yes, the emissions budget recommendations are about right. They will be challenging but are sufficiently realistic to incentivise change. We support the Commission's approach to setting the budgets based on the known and available innovations and technologies. Once proven additional cost-effective technologies are available in New Zealand and accepted in market, future budgets can be revised.

*Q3. Do you support our proposed break down of emissions budgets between gross long-lived gases, biogenic methane and carbon removals from forestry? Is there anything we should change, and why?*

Yes, we support separation of the gases, and the emissions budget recommendations seem about right. The projections of reductions in nitrogen fertiliser use are achievable and are consistent with the Association's estimates.

New Zealand's 4th Biennial Report (2019) projected that the proportion of urea coated with urease inhibitor would increase from 28% in 2017 to 50% by 2030. The Association's current estimates are that already 42% of urea fertiliser sold includes a coating of urease inhibitor. Urea is estimated to be provide for approximately 70 % of fertiliser nitrogen sold.

The industry is working closely with farmers to make sure that they are considering the right, product, the right application rate, at the right time and the right place when making fertiliser application decisions. Farmers and growers are increasingly conscious of their stewardship responsibilities and are working to increase the efficiency of products used while at the same time minimising adverse environmental impacts. Our vision is for New Zealand's food producers to be the best and most skilled users of nutrients in the world and recognised and rewarded for their skill and commitment to producing food within an acceptable environmental footprint.

Water policies have already resulted in an ongoing reduction. Investment in technologies and advice is already enabling farmers/growers to use more mitigations. It is important to note that while the overall trend may be for reductions over time, there may be annual variations in fertiliser use. For example, fertiliser can be used to boost grass and feed growth after a drought. This may be needed to ensure animal welfare is maintained.

It was useful that the Commission provided information on the expected breakdown between sectors and gas.

*Q4. Do you support budget recommendation 4, limit on offshore mitigation for emissions budgets and circumstances justifying its use? Is there anything we should change, and why?*

The Association does not support the proposal to disallow offshore mitigation for emissions budgets 1-3. To achieve less than 1.5 degrees atmospheric warming requires the atmosphere is recognised as a single catchment for emissions and mitigations. The issue to be addressed is ensuring mitigations that result in reduced emissions are bone-fide and genuine offsets, regardless of where they are achieved.

#### Enabling recommendations

*Q5. Do you support enabling recommendation 1 on cross-party support for emissions budgets? Is there anything we should change and why?*

The Association supports the proposal for bipartisan support on budgets. This would help to provide enduring signals to businesses and landowners.

We note that policy predictability is also important. Having buy-in to the overall policy approach from across the political spectrum would also be welcome.

*Q6. Do you support enabling recommendation 2 on coordinating efforts to address climate change across Government? Is there anything we should change and why?*

We support the Commission's proposals. In addition, we propose a fifth:

- e. Require the Government to demonstrate how it is bringing together policies that affect land use to provide an efficient and effective approach to managing environmental risks in agriculture. Require integrated assessments about the implications/co-benefits of policies across water, climate change and biodiversity.

*Q7. Do you support enabling recommendation 3 on creating a genuine, active and enduring partnership with iwi/Māori? Is there anything we should change and why?*

While the legitimacy of this approach is more appropriately determined by iwi/Māori, we support this approach in principle.

We note that Māori are playing an increasingly important role in the agriculture sector. This is true across many areas, including as landowners, growers and farmers, enterprise owners, processors, innovators, and leaders. The Association supports policies that will support Māori development and contribution to the agriculture sector across all these areas.

*Q8. Do you support enabling recommendation 4 on central and local government working in partnership? Is there anything we should change and why?*

The Association supports a fully coordinated approach between central and local government so responsibilities are clear, and we avoid duplicating and conflicting processes. In addition, the Association recommends central government:

- Supports local government to apply national policies in a consistent way throughout the country.
- Considers the best way to support local government with the additional responsibilities of supporting emissions reduction plans, distributional impacts and climate change resilience. Local councils, especially small bodies, may need additional support to respond to increasing environmental legislation/regulations. Central government should consider how it can provide practical support including, for example, secondments or dedicated support staff. This could also contribute to better policies through feedback and understanding of policy implementation in central government.

*Q9. Do you support enabling recommendation 5 on establishing processes for incorporating the views of all New Zealanders? Is there anything we should change and why?*

The Association is neutral about this proposal.

*Q10. Do you support our approach to focus on decarbonising sources of long-lived gas emissions where possible? Is there anything we should change and why?*

We agree with the Climate Change Commission that it is critical to recognise 'where possible' acknowledges that some long-lived gas emissions cannot be avoided entirely. Given clear recognition of this we support this proposal.

*Q11. Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change and why?*

No response

Path to 2035

*Q12. Do you support the overall path that we have proposed to meet the first three budgets? Is there anything we should change and why?*

The Association supports the proposed path. There is very little commentary on the reduction in emissions that could come from agricultural nitrous oxide. While big gains might not be immediately possible, incremental but compounding gains could collectively contribute to meaningful reductions. Gains from continuous improvement will be important, especially in the absence of new technologies. Understanding the importance of compounding incremental gains will be important in getting buy-in to climate change action from farmers and growers.

If we want to see an engaged agricultural sector, the sector needs to be able to see themselves as part of the solution.

We recommend the [Commission][Government] consider further exploring the potential of emissions reductions from nitrous oxide for the agriculture sector. There has been little discussion on nitrous oxide... we are keen to understand the co-benefits of corresponding reductions of nitrous oxide associated with expected methane reductions. Rapid progress on appropriate regulatory pathways for new technologies has a significant role to play.

*Q13. Do you support the package of recommendations and actions we have proposed to increase the likelihood of an equitable, inclusive and well-planned climate transition? Is there anything we should change, and why?*

The Association partially supports the package of recommendations.

There needs to be ongoing work on the distributional impacts on our communities. The cost impacts on household costs are useful, but these are average impacts. We need to understand how our most vulnerable communities, businesses and regions around New Zealand, may be affected by the transition to a low emissions economy. This will enable more targeted and effective safety nets for those who will be most affected. This is especially important for members of poor, rural or otherwise isolated communities.

Direction of policy in the Government's emissions reduction plan

Q14 Transport – no response

Q15 Heat, industry and power – no response

Q16. Do you support the package of recommendations and actions for the agriculture sector? Is there anything we should change and why?

See above complete answer (page 6 of this submission)

Q17. Forestry – no response

Q18. Waste – no response

*Q19. Do you support the package of recommendations and actions to create a multisector strategy, and is there anything we should change?*

The Association supports the concept of a multisector strategy.

We encourage the Government to work to understand both the drivers and barriers to business behaviour change and investments in climate change mitigation. This will provide important insights to the levers they have available. Reading the draft report, it seemed the Commission was focused only on understanding the behaviour change of individuals. While this is important, many of the changes we need to see to bend the curve rely on businesses taking action. We encourage the Commission and the Government to seek to understand how businesses make decisions about infrastructure, investment and other changes that will affect emissions, as it designs policies targeted to change their behaviour.

*Q20. Do you agree with Budget recommendation 5 on the rules for measuring progress? Is there anything we should change any why?*



We support a production-based approach, with farm scale point of obligation for emissions accounts, as this is the most direct approach to drive behaviour change for emissions reductions and emissions efficient food production to enable food security.

#### Advice on the NDC and potential reductions in biogenic methane

*Q21. Do you support our assessment of the country's NDC? Do you support our NDC recommendation?*

21a. Continued revision of international targets risk creating uncertainty and as a result could delay progress in actual emissions reduction.

21b. This should also reflect New Zealand's national circumstances, as per the Paris Agreement. Part of New Zealand's national circumstances are that we have a large proportion of our emissions coming from agriculture, have had a rapidly growing population, and have an existing high level of renewable electricity generation. As discussed in paragraph 5, regardless of the quantity of reductions in New Zealand's NDC, our greatest impact in reducing global emissions and limiting warming to 1.5°C above pre-industrial will come from developing and demonstration reductions in agricultural emissions than enable food security, and can be adopted by other countries. These are not excuses for inaction. But they should be considered as part of our assessment of agricultural contributions to an achievable and appropriate NDC for New Zealand.

*Q22. Do you support our recommendations on the form of the NDC?*

We support an approach which provides for split gas targets.

*Q23. Do you support our recommendations on reporting on and meeting the NDC? Is there anything we should change, and why?*

The Association supports these recommendations. However, we note there is enormous uncertainty in the project global reduction required for the separate gases. Food security remains paramount, as does an early start on "bending the curve". Certainty for businesses investment and establishing robust systems is critical to achieve these.

*Q24. Do you support our assessment of the possible required reductions in biogenic methane emissions?*

No response.

#### Concluding Comment:

Thank you for the opportunity to provide commentary and feedback on the Climate Change Commission Draft Advice about the direction of policy necessary to put Aotearoa on a pathway to quickly, significantly and permanently reduce greenhouse gas emissions.

End.