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**SUBMISSION**

To  
**New Zealand Productivity Commission**  
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on

**Low-Emissions Economy**

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## Context for FANZ feedback

- 1 FANZ has carefully considered the two key questions framed by the Productivity Commission on a 'Lower Emissions Economy':

*What opportunities exist for the New Zealand economy to maximise the benefits and minimise the cost that a transition to a lower net-emissions economy offers, while continuing to grow incomes and wellbeing?*

*and*

*How could New Zealand's regulatory, technological, financial and institutional systems, processes and practices help realise the benefits and minimise the costs and risks of a transition to a lower net-emissions economy?*

- 2 FANZ response primarily addresses issues relating to agricultural emissions.
- 3 FANZ supports a reduction in greenhouse gas emissions, in a way that minimises economic and social disruption. However, we consider that a long-term approach and a variety of mechanisms and approaches will be required for achieving the goal of low-emission economy. While there are limited mitigations currently available for agricultural GHG emissions, innovations will happen, so the focus now needs to be on preparing agriculture to take appropriate responsibility for emissions.
- 4 FANZ considers that New Zealand solutions for agricultural greenhouse gas emissions, can have a global impact if also adopted internationally.

## About Fertiliser Association of New Zealand (FANZ)

- 5 FANZ is a trade association representing the New Zealand manufacturers of superphosphate and nitrogen fertilisers. FANZ member companies are Ballance Agri-Nutrients Ltd and Ravensdown Limited. Both these companies are farmer co-operatives with some 45,000 farmer shareholders, and between them supply over 98% of all fertiliser used in New Zealand.
- 6 The cooperative base of the fertiliser industry means the industry is driven by delivering best value to its farmer shareholders. The industry is focussed on fertiliser effectiveness and efficiency enabling profitable farming operating within environmental limits.
- 7 FANZ on behalf of the industry supports and encourages an environmentally responsible, science-based approach to nutrient management and regulation.

- 8 FANZ member companies provide product that is critical to New Zealand farming systems with interests and responsibility across all agricultural sectors, including dairy, sheep, beef, arable and horticulture. The industry has an almost unique pan-sector perspective.
- 9 To promote good management practices, FANZ has funded training programmes, and developed codes of practice, information booklets and fact sheets. FANZ also funds research, partners with government on research and development projects, and works closely with other organisations in the agricultural sector on industry-good issues.
- 10 Along with AgResearch and the Ministry for Primary Industries, FANZ is a one third owner of OVERSEER®. Management of OVERSEER was transitioned in 2016 to a new company structure (OVERSEER Ltd). This includes the addition of two independent directors to provide an independent perspective on the management and on-going development of OVERSEER. Overseer Ltd is established as a not for profit company, where revenue from subscription is used for further development of the model.
- 11 FANZ is continuing to provide financial support to Overseer Ltd as it transitions to a business model which will ultimately provide a self-funding service to the primary industry.

#### **OVERSEER®**

- 12 OVERSEER is an agricultural management tool which assists farmers and their advisers to examine nutrient use and movements within a farm system. It assists in decision making for nutrient use to optimise production and manage the risk of losses to the environment. It is a science based model that is regularly updated to incorporate improved science.
- 13 OVERSEER provides a long-term annual average estimate of nutrient cycling in a farm system. It does not provide for day to day management, but rather provides estimates for each of the pathways for nutrient sources and losses for a farm system. It assumes the farm system is in a stable state and not undergoing transition from one system to another, or from one level of development to another.
- 14 These diffuse nutrient losses from farm systems cannot easily be measured. Modelling provides estimates of these nutrient movements and can be used to understand nutrient requirements to maintain soil fertility at its current levels, and also, to understand the relative change in nutrient losses under different scenarios for a farm system. (Nutrient losses include outputs to saleable product, to the atmosphere or to surface runoff and leaching below the root zone).
- 15 Use of OVERSEER for critical evaluations, such as for regulation, requires qualified and experienced advisers who have a good understanding of the model's operations and underlying assumptions. It also requires standardised data inputs and a good understanding of farm systems and nutrient management.

16 Use of OVERSEER has required significant development of capability in farm advisers.

### **Nutrient Management Adviser Certification Programme**

17 The Nutrient Management Adviser Certification Programme (NMACP) was developed with the aim of building and upholding a transparent set of standards for nutrient management advisers to meet, so that they provide nationally consistent advice of the highest standard to farmers

18 There are currently over 160 certified nutrient management advisers throughout New Zealand.

### **FANZ's philosophy and approach**

19 The industry supports systems that provide flexibility for land users to achieve desired outcome from an environmental and production perspective by managing farm system losses. This allows farmers to choose the most effective way of achieving outcomes for their particular property. It helps avoid regulation un-intentionally constraining business growth and gives space for innovation and transition to achieve both primary production goals and environmental outcomes.

20 FANZ supports effects based measures, based on losses from the farm system. Losses cannot be measured directly and modelling provides for the management of discharges by way of estimating annual average inputs and outputs of nutrients per hectare per year.

## **Submission**

### **Q1 How can the Commission add the most value in this inquiry?**

21 The Commission report will provide opportunity to develop an economy wide approach to transition to low-emissions with a full consideration of both the transition pathways, and impacts and risks of the transitions. The Productivity Commission can add most value, as a first priority by:

- a) *providing an independent and robust analysis of whole-of-economy trade-offs based on sound economic analysis*
- b) *taking a longer-term perspective in identifying policies and institutions that will be required to achieve a low-emissions economy that enhances productivity and wellbeing;*
- c) *developing conceptually sound but doable recommendations for change;*

**Q2 Chapter 3 of this issues paper mostly looks at ways to reduce emissions directly at their source. What other approaches would help identify opportunities to effectively reduce emissions?**

22 Chapter three considers reducing emissions at source in the, Agriculture, Forestry, Energy generation, Industrial Processes, Buildings and Waste sectors.

23 Expectations for reductions across these different sectors must be tailored to the New Zealand context of our current emissions profile and opportunity for reductions. Where alternatives to fossil fuels exist, alternatives should be sought as rapidly as possible to reduce GHG emissions in absolute terms, as soon as is feasible. For agricultural emissions, alternatives and mitigations are not so clear.

24 NZ has been to the forefront of developing GHG mitigations for pastoral agriculture on a global platform. While we are not there yet in terms of major breakthroughs, the results are encouraging. This may be NZ's biggest contribution to global emissions reductions.

25 However, in the meantime the questions are: How can we effectively transition NZ agriculture to a world that takes account of GHGs? How can we encourage farms to start to transition so that that we increasingly see consideration of GHGs in their choices on-farm? What actions can be taken now, even if they are small?

26 For agricultural emissions, the need for food security from increased agricultural production to meet the projected increased global population will require a strong incentive and reward for intensity based measures for agricultural GHG emissions, as well as absolute reductions.

27 With the correct policies and incentives, New Zealand has the potential to play a significant role in reducing global GHG emissions by developing, piloting and demonstrating efficient agricultural production on an intensity basis. If efficient systems can be developed, New Zealand could support reductions globally, despite New Zealand being responsible for a negligible percentage of total global emissions.

28 Expectations for reduction in New Zealand need to be considered in the content of the potential for carbon leakage. If the costs of production rise excessively there will be risk that investment moves off shore. Offshore producers who are not facing GHG costs could produce more cheaply and out compete NZ product. This principle was recognised in the development of the current ETS – where trade exposed industries were given initial protection from the full impact on the scheme.

29 There are different options available for effecting behaviour change and adoption of new mitigations. For example, direct input controls, farm scale output controls, and processor level controls. FANZ considers that targeting emissions at source is most likely to drive desirable behaviours whether they are measured in absolute or intensity terms. In so doing, FANZ

considers it is essential to provide for adoption of new innovations, flexibility to respond to seasonal variation and market signals and develop efficient agricultural systems which continue to provide for economic, social and cultural well-being within environmental limits. Responsibilities to incentivise and drive adoption of change occur at all levels, supply, production, processing and market.

- 30 Steps have already been taken with national and regional water policies to drive efficiencies with environmental accountability. There are close parallels between managing to environmental limits in a water context and greenhouse gas reduction in a climate change context. It is critical that approaches for GHG and water policies for agriculture be closely integrated, to avoid duplication of costs to the sector and to maximise the environmental outcomes.

**Q3 To what extent is it technically and economically feasible to reliably measure biological emissions at a farm level?**

- 31 There are direct parallels in the concept of farm scale estimation of GHG loss for Climate Change regulation and farm scale estimation of nitrogen loss for water quality regulation.
- 32 FANZ considers that this concept of “accurately measuring” nitrogen loss has created enormous obstruction and difficulty in developing and implementing regulatory methods and controls to manage nitrogen loss from farms.
- 33 To “reliably MEASURE” diffuse losses implies a level of precision and accuracy that seriously undermines endeavours to appropriately manage farm system losses.
- 34 In short, FANZ is concerned that the use of language should be clear that it is not technically and economically feasible to “reliably MEASURE” GHG emissions at farm scale, national scale or global scale. It is however, technically feasible to usefully and meaningfully model and estimate GHG emissions at farm scale, national scale, and global scale.
- 35 At the global and national scale, it is readily accepted that greenhouse gas losses can only be modelled, and that these emissions values are very broad brush stoke estimates, based on assumptions and averages. The error and uncertainty in the global and national GHG estimates are very significant, but are accepted as part of the modelling process and the models are considered useful and necessary. The error and uncertainty in modelling and estimating GHG emissions at farm scale needs to be within workable and acceptable limits to be useful for management of emissions at farm scale.

- 36 If modelling of greenhouse gas emissions is adopted at farm scale – it will likely need to be based on OVERSEER. A key advantage in using OVERSEER is that you have a tool that is consistent across climate and water policy.
- 37 FANZ considers that reliably modelling and estimating farm scale GHG loss is feasible, and that farm scale point of obligation provides for flexibility and innovation, and is the most likely way to successfully effect the required behaviour change.
- 38 Furthermore, authoritative research reports and investigations<sup>1</sup> confirm that OVERSEER operates at a suitable farm scale and is appropriate for estimating GHG emissions in a manner which is consistent with the National Inventory methods.
- 39 The economic considerations of estimating farm system GHG losses using a model will depend very much on a combination of factors including, the manner it is used, the number of qualified professionals required to execute the modelling, auditing and compliance requirements, and timeframes which apply.
- 40 Experience with farm system estimates for regulation addressing water quality has demonstrated that without strong drivers, rural professionals are slow to take up the training and certification available for nutrient management advisers. Suitable time frames and drivers for developing the appropriate capability is essential. FANZ considers that farmers will need reliable and consistent support and advice to effect change based on modelled GHG emissions. FANZ is already working with DairyNZ on a greenhouse gas emissions certification system building on the certification process already in place for nutrient management advisers. This is intended to increase understanding and capability in the sector and is scheduled to be in place early in the New Year.

**Q4 What are the main opportunities and barriers to reducing emissions in agriculture?**

- 41 Firstly, there is need to work with the sector and recognise the challenges that exist. In recent years there has been a significant shift in understanding and attitude. There is a need to give

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<sup>1</sup>*Initial review of the suitability of OVERSEER Nutrient Budgets Model for farm scale greenhouse gas reporting* 2017, Cecile de Klein et al., Final Report for Ministry for Primary Industries and the Biological Emissions Reference Group, 2017,

*'Greenhouse Gas Footprinting Using OVERSEER® – The Whole Picture'*, 2011, Wheeler et al., in *Adding to the knowledge base for the nutrient manager*. (Eds. Currie LD, Christensen CL). Occasional Report No. 24, Fertilizer and Lime Research Centre, Volume: <http://flrc.massey.ac.nz/publications.html>.

farmers a credible and realistic pathway towards taking responsibilities for emissions. The development of trust and long-term direction is critical. Currently there is significant risk for the sector due to the potential for changes in policy with changing governments. An independent Climate Change Committee / Commission, with a similar role to that described for the UK legislative process, which provides independent advice and reporting, could smooth the fluctuations in direction introduced by successive governments and help provide consistency in approach. Government signals need to be based on cross party consensus, be long term and be enduring. The primary sector needs to be able to anticipate and manage realistic costs. Any transition needs to encourage and foster innovation and development of new financially viable farming systems.

- 42 To date, the opportunities for reducing emissions in agriculture have been achieved through significant efficiency gains over long periods. Growth in agricultural GHG over the last 10 has been reasonably small at a time when there has been significant growth in farm productivity. Specifically in relation to fertiliser use and related GHG emissions, where there is risk of ‘carbon leakage overseas’ and few direct mitigation options, efficiency measures should consider also the full lifecycle analysis. Several new mitigations are in the pipeline, as identified in the issues paper, which will add to these meaningful gains. However, there is currently no “silver bullet” which will readily resolve agricultural greenhouse gas emissions.
- 43 One promising technology, the use of DCD, nitrification inhibitor, developed and promoted by the fertiliser industry provides very significant reductions in nitrous oxide emissions from urine patches of livestock (with co-benefit for water quality from appreciable reductions in nitrate leaching). This tool remains unavailable due to limitations in protocols and procedures for adopting new applications of product in the international Codex Alimentarius<sup>2</sup>. Working with international governments to expedite the processes and procedures for the Codex Alimentarius (while maintaining the integrity of the programme), will provide an opportunity to more quickly introduce useful mitigations from products such as DCD, and others, for use in agricultural systems.
- 44 The rapid increase in the use of, urease inhibitors signal the sector’s comfort with adoption of technologies that work for farming systems. It is critical that the use of any new technology is able to be captured in the greenhouse gas inventory.
- 45 Similarly, there is a need to account for the reductions in greenhouse gas emissions from mitigations associated with water quality. Mitigations such as riparian planting – could have benefits for both water and climate policy.

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<sup>2</sup> The Codex Alimentarius, or "Food Code" is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. The Commission, also known as CAC, is the central part of the Joint FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade.



- Q5 What are the issues for government to consider in encouraging alternative low-emissions land uses?**
- 46 Flexibility to adopt new innovations and to respond to market incentives is critical.
- 47 FANZ does not support the prescription of particular land uses because of the risk of locking in uneconomic land uses and inefficiencies in production.
- 48 It is necessary to focus on best outcomes from GHG and water quality perspectives, and best land-uses will follow. Opportunity to pursue a range of viable land-use systems which protect economic, social and cultural well-being are essential.
- 49 Where emissions reductions are not readily achievable, offsetting emissions provides an opportunity for economic security while still achieving net benefits in emissions. Farm scale modelling provides for site specific or enterprise specific opportunities for offsetting.

- Q6 What are the main barriers to sequestering carbon in forests in New Zealand?**  
No comment
- Q7 What policies, including adjustments to the New Zealand Emissions Trading Scheme, will encourage more sequestering of carbon in forests?**  
No comment
- Q8 What are the main barriers to the uptake of electric vehicles in New Zealand?**  
No comment
- Q9 What policies would best encourage the uptake of electric vehicles in New Zealand?**  
No comment
- Q10 In addition to encouraging the use of electric vehicles, what are the main opportunities and barriers to reducing emissions in transport?**  
No comment
- Q11 What are the main opportunities and barriers to reducing emissions from the use of fossil fuels to generate energy in manufacturing?**  
No comment
- Q12 What changes will be required to New Zealand's regulatory, institutional and infrastructural arrangements for the electricity market, to facilitate greater reliance on renewable sources of energy across the economy?**  
No comment
- Q13 What evidence is there on the possible physical effects of future climate change on sources of renewable energy in New Zealand, such as wind, solar and hydro power?**  
No comment
- Q14 Apart from the regulation and operation of the electricity market, what are the main opportunities and barriers to reducing emissions in electricity generation?**  
No comment

- Q15** What are the main opportunities and barriers to reducing emissions in industrial processes (such as the production of steel, aluminium and cement) and in product use (such as the use of hydrofluorocarbons in refrigeration and air conditioning equipment)?  
No comment
- Q16** What policies and initiatives would best promote the design and use of buildings that produce low greenhouse gas emissions?  
No comment
- Q17** What are the main opportunities and barriers to reducing emissions in waste?  
No comment
- Q18** Policies to lower emissions from particular sources, technologies and processes can have interactions with emission sources in other parts of the economy. What are the most important interactions to consider for a transition to a low-emission economy?  
No comment

**Q19** What type of direct regulation would best help New Zealand transition to a low-emissions economy?

50 Direct regulation on transport and fossil fuel resources, being mindful of trade exposed industries may provide a clear way forward for low-emissions economy, however, for agricultural emissions, where there are few mitigations and alternatives available, a range of mechanisms will be required. The mechanisms must provide for flexibility in land-use options including flexibility to introduce innovative solutions and to respond to the markets.

**Q20** Acknowledging the current review, what changes to the New Zealand Emissions Trading Scheme are needed if it is to play an important part of New Zealand's transition to a low-emissions future?

51 The ETS is acknowledged to be one of a suite of tools, but to date it has had limited impact. The changes signalled in the recent review should significantly increase its impact.

**Q21** What type of market-based instruments would best help New Zealand transition to a low-emissions economy?

52 Market based instruments are only part of the solution – it is the policies and incentives that are built around the market based instruments that are critical. Provision for intensity based incentives for agricultural GHG emission outside the ETS is an option. Intensity based measures will need the correct metrics and the Productivity Commission could provide direction or give recommendations on the appropriate suite of metrics to achieve the outcomes sought.

- 53 The development of offsetting regimes (beyond tree planting) to enable investment in innovation and emissions reductions are required. Offsetting can occur at national scale, but if farm scale or processor scale point of obligation applies, offsetting can be provided for at these levels, providing more flexibility for land managers and enterprise growth or development. Should there be an alternative mechanism introduced where industries covered by the ETS have the alternative option of investing in emissions reduction outside their sector? Would it be more effective for the agricultural processing sector to invest in on-farm emissions reduction as an alternative to purchase of NZU's? This could allow for cheaper options to reduce emissions where reductions could be most enduring.
- 54 NZ business and industry have been vocal that they are keen to lead the transition and have asked for clear government direction and enabling policies. It is unclear how this intent would be best supported by new market based instruments, or whether a wider suite of enabling policies needs to be considered.

**Q22 What type of support for innovation and technology would best help New Zealand transition to a low-emissions economy?**

- 55 Continued research and development in solutions and efficiency gains in agricultural emissions is essential. A global focus is necessary, recognising New Zealand is well placed to provide a significant role in addressing the food security and agricultural emissions. Helping to drive improvements in the protocols and procedures for international schemes such as Codex Alimentarius can have important immediate impacts in enable some current mitigations to be adopted, not just in New Zealand but globally.

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| <b>Q23</b> | <b>How can New Zealand harness the power of financial institutions to support a low-emissions transition?</b><br>No Comment  |
| <b>Q24</b> | <b>What type of alternative approaches (such as voluntary agreements or support for green infrastructure) would best help New Zealand transition to a low-emissions economy?</b><br>No Comment   |
| <b>Q26</b> | <b>What are the main uncertainties affecting New Zealand businesses and households in considering investments relevant to a low-emissions future? What policies and institutions would provide greater confidence for investors?</b><br>No Comment |
| <b>Q27</b> | <b>What approaches, such as regulatory frameworks or policy settings, would help embed wide support among New Zealanders for effective reduction of domestic greenhouse gas emissions?</b><br>No Comment   |

**Q28 Is New Zealand's current statutory framework to deal with climate change adequate? What other types of legislation might be needed to effectively transition towards a low-emissions economy?**  
No Comment

**Q29 Does New Zealand need an independent body to oversee New Zealand's domestic and international climate change commitments? What overseas examples offer useful models for New Zealand to consider?**

56 The Productivity Commission has looked carefully at the UK example of a Climate Change Act which strengthens commitments by including a long-term target in legislation, and introducing an independent Climate Change Committee to provide advice and reporting.

57 In relation to the very significant challenges in addressing agricultural emissions, where there is no clear single approach or pathway to an emission target, there seems little advantage to setting any such target in legislation. A mix of measures may apply across different sectors. For example, setting firm targets for absolute reductions where there is a clear pathway for emissions reductions, and more aspirational or relative/ intensity targets set where the pathway for mitigations are less clear.

58 The question of legislative targets could be addressed quite separately from the merits of a Commission or Climate Change Committee which can provide independent advice and reporting to the government.

59 A mechanism to provide certainty to business and ensure economic stability in relation to climate change controls is essential. Advice and reporting from a Climate Change Committee may help smooth fluctuations in policy and approach of successive governments. A variation on a Commission may include a multiparty and industry partnership programme to agree on direction setting with a similar purpose.

**Q30 How can adaptability best be incorporated into the system supporting New Zealand's low-emissions transition?**  
No Comment

**Q25 In addition to "core" climate policies and institutions, what other changes to policy settings or institutional frameworks are required to effectively transition New Zealand to a low-emissions economy?**  
No Comment

**Q31 What types of analysis and underlying data would add the greatest value to this inquiry?**  
No Comment

**Q32 What should be the mix, and relative importance of, different policy approaches (such as emissions pricing, R&D support, or direct regulation) in order to transition to a low-emissions economy?**

60 For agricultural emissions, R&D and intensity based emissions incentives, alongside incentives for direct absolute emissions reductions, where feasible, all have an important role to play. Realistic time frames for development of solutions, developing capability to deliver and for transitions in behaviour change will be necessary.

**Q33 What are the main co-benefits of policies to support a low-emissions transition in New Zealand? How should they be valued and incorporated into decision making?**

61 Co-benefits of a successful low-emissions framework, could include, water quality benefits, protection of high value productive land, international recognition of a New Zealand developed system for emissions reduction (enabling food security) being adopted internationally (as opposed to international systems being imposed on New Zealand to our economic and social detriment). These benefits would be reflected in a stronger positioning for trade and market access.

**Q34 Who are the most important players in driving forward New Zealand's transition to a low-emissions economy?**

62 Based on the emissions profile for New Zealand, Primary Industry (including forestry), Energy, Fuel and Transport industries will be the key contributors to a successful low-emissions economy in New Zealand. The approaches required to achieve a meaningful contribution to reductions in greenhouse gas emissions, will be different for each of these sectors, if New Zealand is to also continue to grow incomes and well-being.

**Q35 What measures should exist (and at what scale and duration) to support businesses and households who have limited ability to avoid serious losses as a result of New Zealand's transition to a low-emissions economy?**

63 For agricultural emissions, in the absence of a silver bullet, emissions reduction will need to come from improved efficiencies and behaviour change. Suitable time frames for transition of business enterprises will be required, and time to build capability to support adoption of mitigations is needed.

64 The scale of measures for agriculture will depend very much on what new technologies become available. However, at present agricultural mitigation options are limited, and will require a

number of measures working in combination to ensure full flexibility for the best economic use of land and natural resources.

**Q36 What are the essential components of an effective emissions-mitigation strategy for New Zealand that will also be economically and politically sustainable?**

65 New Zealand is in unique position compared to other OECD countries in that agriculture accounts for a significant component of its export income, and a significant proportion of its GHG emissions. Therefore, an effective emissions strategy for New Zealand will need to provide for reductions in absolute terms for fuel and transport and will need to provide for a combination of absolute and intensity based reductions for food and fibre production, if it is to remain economically and politically sustainable.

**Q37 Should New Zealand adopt the two baskets approach? If so, how should it influence New Zealand's emissions reductions policies and long-term vision for the future?**

66 The two baskets approach places different emphasis on different greenhouse gases recognising that if short-lived gases, like methane, were to be reduced they have much less impact on the long-term warming potential. However, this assumption requires the short-term gases are, in fact, mitigated or reduced meaningfully.

67 A two baskets approach may be justified if there is confidence meaningful mitigations are available for the short-term gases, or if there is confidence this approach will deliver solutions for short-term gases.

**Q38 How should the issue of emissions leakage influence New Zealand's strategy in transitioning to a low-emissions economy?**

68 For industries which are significant to New Zealand, protection against 'emissions leakage' combined with incentives to support the most GHG efficient systems on an intensity basis, should be provided.

**Q39 What do you see as the main benefits and opportunities to New Zealand from a transition to a low-emissions economy?**

69 If a low emissions economy is achieved while maintaining a viable agriculture sector, New Zealand will benefit from being in a strong position to promote international GHG approaches

which are favourable to New Zealand and to rebuke international approaches which may be less effective in addressing GHG emissions while providing for food security. Overall this will contribute to stronger position for New Zealand trade.


**Q40 What does your long-term vision for a low-emissions economy look like? Could a shared vision for New Zealand be created, and if so, how?**

70 For agriculture, a low-emissions economy could provide a strong primary industry, able to adopt new innovations and with flexibility to respond to climatic variation and economic signals with a full range of viable land-use options. It could meet GHG targets in absolute terms or efficiency terms, as is appropriate for food production, while eliminating dependence on fossil fuels for transport and energy, in favour of renewable resources. Trade exposed industries would be protected, while incentivised to achieve maximum efficiency. Low-emissions production systems would be achieved with a mix of a Market Based Instrument, industry incentives, improved production efficiencies and new technologies and innovation supported by sound science. New Zealand primary industry would have secured and maintained strong trade relationships and be recognised internationally as leading in agricultural systems which support viable food and fibre production within environmental limits.

The pathway to achieve a low-emissions economy is firstly through working alongside the farming sector to explore and test opportunities and risks; and through developing and incentivising use of science and technology for maximising efficient agricultural production where intensity based measures are required, and enabling absolute GHG reductions where feasible. The pathway must include effective communication so that the benefits of New Zealand's improved agricultural systems are recognised by domestic stakeholders and international bodies seeking to achieve food security and economic stability, while reducing GHG emissions globally.

**Concluding comment**

71 Thank you for the opportunity to present this feedback and comment on the Issues Paper. The Fertiliser industry welcomes the opportunity to meet with the Productivity commission and discuss in more detail some of the themes explored in this submission.



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2 October 2017