

**SUBMISSION**

To

**New Zealand Productivity Commission**

PO Box 8036

The Terrace

Wellington 6143

[info@productivity.govt.nz](mailto:info@productivity.govt.nz)

on

**Draft Report on  
Low-Emissions Economy**

---

Date: 8 June 2018

Contact: Greg Sneath

Organisation: The Fertiliser Association of New Zealand

Postal Address: PO Box 11519, Manners St, Wellington, 6142

Phone: (04) 473 6552

E-mail: greg@fertiliser.org.nz

## About Fertiliser Association of New Zealand (FANZ)

- 1 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.
- 2 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.
- 3 FANZ on behalf of the industry supports and encourages an environmentally responsible, science-based approach to nutrient management and regulation.
- 4 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.
- 5 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.
- 6 Along with AgResearch and the Ministry for Primary Industries, FANZ is a one third owner of OVERSEER<sup>®</sup>. 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.
- 7 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<sup>®</sup>

- 8 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.
- 9 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.
- 10 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).

- 11 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.
- 12 Use of OVERSEER has required significant development of capability in farm advisers.

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

- 13 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
- 14 There are currently over 170 certified nutrient management advisers throughout New Zealand.

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

- 15 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.
- 16 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.

### **Context for FANZ feedback**

- 17 FANZ considered the report is well researched and logical in its presentation, reasoning and recommendations. However, some of the text and messaging in Sections 8 and 10 were found to be confusing, and in parts better explanations are sought.
- 18 This submission addresses the text raised in the Findings and Recommendations. It is considered that as a summary, it is the Findings and Recommendations which will give direction to the key matters considered for a low emissions economy.
- 19 Not all 'Findings' and 'Recommendations' have received comment.
- 20 For the most part the feedback in this submission is focussed on matters relating to agricultural emissions.

# Submission

## Chapter 4 – Emissions pricing

### Findings

**F4.14** A well-crafted package of reforms is needed to fix the weaknesses in the NZ ETS that compromise its ability to deliver effective emissions pricing and New Zealand's emissions targets for 2021 to 2030 and beyond. The reforms need to provide a good balance between control over unit supply (ie, an effective cap) and protection against damagingly volatile emission prices. They also need to provide much-needed stability, transparency and forward guidance to support decision-making by investors to lower their net emissions.

#### **21 Comment:**

In relation to agricultural emissions in a 'Global catchment' there should be provision for intensity-based measures as well as absolute measures. This provision for intensity-based measures for food production would have an impact on the nature of "*an effective emissions cap*". (NZ made it clear in its Intended Nationally Determined Contribution (INDC) that commitments were made in the context of 'recognising the specific biophysical characteristics of the land sector and the need to manage multiple objectives, including global food security').

## Chapter 4 – Emissions pricing

### Recommendations

**R4.1** The Government should reform the NZ Emissions Trading Scheme rather than replace it with a carbon tax. The reforms should provide a good balance between control over unit supply (i.e, an effective emissions cap) and protection against excessive volatility in the price of emission units. The reforms should also provide the institutional and regulatory underpinnings for a credible and efficient market in emission units, as well as transparency and forward guidance to incentivise long-term investments in lower emissions.

#### **22 Comment:**

In consideration of the Productivity Commission's recommendations on Emissions Pricing, and in consideration of New Zealand's agricultural emissions as part of a 'global catchment' there should be provision for intensity-based measures as well as absolute measures. This provision for intensity-based measures for food production would have an impact the nature of "*an effective emissions cap*" and pricing metrics.

## Chapter 8 – Short-lived and long-lived gases

### Findings

**F8.1** The contribution of greenhouse gases (GHGs) to warming is a function of their stock in the atmosphere. The stock of both short- and long-lived greenhouse gases is relevant to the likelihood of successfully limiting peak-warming to 2°C or less (as required by the Paris Agreement).

Because of their atmospheric persistence, net-emissions of long-lived gases must reach zero. Emissions of short-lived gases must stabilise by inflows equalling outflows (with a consistent, minor decrease in emissions to achieve a stable temperature).

### 23 Comment:

While the general concepts and messaging in comparisons between long and short-lived gases in these findings are generally supported, it is felt the messaging and terms used have the potential to lead to considerable confusion about what is achievable and what is necessary to achieve the climate change goals.

Specifically in relation to F 8.1; the difference between “net zero emissions” (for long lived gases), and “stabilised with inflows equalling outflows” (for short-lived gases) is not explained. At face value, the term “net-zero” has the same meaning as “inflows equalling outflows”. However, due to the different nature of the gases describing and defining “net-zero” in terms of the Global Warming Potential index, is more complicated.

A preference, assuming this interpretation is correct: is to amend as follows:

*“The contribution of greenhouse gases (GHGs) to warming is a function of their stock in the atmosphere. The stock of both short- and long-lived greenhouse gases is relevant to the likelihood of successfully limiting peak-warming to 2°C or less (as required by the Paris Agreement).*

*~~Because of their atmospheric persistence, net-emissions of long-lived gases must reach zero. Emissions of short-lived gases must stabilise by inflows equalling outflows (with a consistent, minor decrease in emissions to achieve a stable temperature).”~~*

*For short-lived gases the Global Warming Potential index will alter as the ratio of long and short-lived gases changes over time. Therefore, while net-zero emissions satisfactorily describes the target for long lived gases, the target for short lived gases should be expressed as a level of emissions to achieve a specified temperature limit. “*

**F8.2 Current scientific evidence shows that global emissions of all long-lived gases must be reduced to net-zero at a minimum to stabilise the climate well below 2°C. The sooner that net-zero long-lived gases can be achieved, the more likely warming will not exceed 2°C. This means giving greater relative priority to mitigation of long-lived gases.**

**Reductions in short-lived gas emissions will also be required in the context of limiting peak warming to 2°C. Yet because the allowable stock of short-lived gases is a function of the stock of long-lived gases, the level of short-lived gas emissions reductions needed in the context of the 2°C goal is less certain.**

### 24 Comment:

The finding presented in F 8.2 that a priority must be placed on the net-emissions of long term gases is correct at global scale and the New Zealand national emissions scale, however, the report is also clear that any reduction in short-lived gases provides a level of leeway in reduction of long-lived gases. Furthermore, as a subset, New Zealand’s agricultural emissions have a significant portion of the overall emissions as short-lived gases. Therefore, both short-lived and long-lived gases must be targeted.

Another consideration which is not clearly addressed is a difference between sources of carbon contributing to long-lived gas emissions, (e.g. fossil fuel emissions relative to biofuel emissions). The difference in carbon source being a terrestrial source (fossil fuel) compared to atmospheric source (plants which take their carbon from the atmosphere). While the source of carbon for the long-lived gas make no difference in terms of the emission's global warming potential, it stands to reason that carbon sources will make a difference in terms of the overall balance required for sequestration of emissions and the opportunity to achieve "net-zero" emissions.

(for example, the advantage of biodiesel from sugar cane production over diesel from fossil fuels)

These considerations should be included and explained.

## Chapter 8 – Short-lived and long-lived gases

### Recommendations

**R8.1 The Government should establish separate long-term domestic targets for short- and long-lived gases, together with a regular series of reviews of progress against these targets. The long-lived gas target should be a net-zero target by a specified end date and the short-lived gas target should aim for a stabilisation level within a specified temperature limit. The short-lived gas target must be underpinned by an explicit quantity goal (ie, maximum emissions rate).**

**The Government should support these separate targets with a single all-gases target. The all-gases target should be set in primary legislation. The Government should carefully consider the appropriate legislative instrument to express the separate short and long-lived gas targets.**

#### 25 Comment:

Distinguishing between short and long-lived gases, with separate domestic targets is supported, as is the need for regular reviews of progress against the targets. However, this differentiation should go further.

It is evident from the discussion paper that the level of reductions required for long-lived and short-lived gases are interdependent but cannot simply substitute for each other. The amount of reduction required from short-lived gases is very difficult to ascertain.

Support is given to the different methods of describing the targets for long-lived gases and short-lived gases, however the background text and discussion in the report should be more clear in its explanation of these descriptors and the reasons for these differences.

A single all gases target is supported, however, given the large amount of uncertainty in modelling and mitigation options, caution is expressed about setting a target in legislation.

To extend the recommendation, in addition to a single all gasses target, consideration should be given to separate sector targets in addition to separate short and long-lived gas targets. This consideration should acknowledge that New Zealand has a unique emissions profile compared to other OECD countries and there are very different limitations on the opportunities to reduce emissions in the different sectors.

Provision should be made within the targets for intensity-based measures where appropriate to maximising food security and where appropriate because of lack of mitigations.

## Chapter 10 – Land use

### Findings

**F10.4** No mitigation option currently exists for achieving dramatic reductions in New Zealand’s agricultural emissions without substantially reducing production. Yet, many farmers can achieve modest reductions (perhaps up to 15%) through productivity gains and shifting to low-emissions practices. Some options can also improve farm profitability. More options are currently available for reducing nitrous oxide emissions than methane. Options for sheep and beef farming are much more limited than for dairying.

#### **26 Comment:**

The ability for reducing nitrous oxide emissions in agriculture are overstated. Other than cutting back on production, mitigation options for agricultural nitrous oxide emissions also remain very limited. There is an argument for intensity-based measures where mitigations option are limited, and food security is required.

**F10.10** New Zealand’s trade competitors do not yet face a price on their agricultural emissions.

Given New Zealand’s agricultural sector is highly trade-exposed, introducing a price for agricultural emissions without support would reduce the international competitiveness of New Zealand farms and potentially result in emissions leakage.

Yet, with adequate support for farmers (eg, provision of free allocations), pricing agricultural emissions will provide incentives to reduce emissions, while lessening any risk to the viability of New Zealand’s agricultural businesses. Also, the risk may not be as severe as some suggest, since New Zealand’s core competitors in international trade are likely eventually to face comparable regulation of emissions.

#### **27 Comment:**

As no other countries currently have comparable regulation on agricultural emissions and New Zealand is likely to be the first to introduce it, trade risk is very real. This trade risk should not be diminished or dismissed until comparable regulation is introduced for the majority of trading partners internationally.

**F10.12** OVERSEER is currently the main tool for monitoring emissions at the farm level, and is already widely used by dairy farmers for nutrient management. While its overall structure is suitable for monitoring farm-level emissions, further work is under way to improve its transparency, the extent to which it captures a wide range of on-farm mitigation options, and to better align the model to the methodology used in preparing the national inventory.

#### **28 Comment:**

For clarity, it should be understood that to model nutrient cycling on the farm system, greenhouse gas losses have always been part of the OVERSEER Nutrient Budget. The model is specifically designed to estimate nutrient inputs and outputs for the farm system, so by necessity this includes GHG losses. There has not been, and there is not yet a requirement to monitor and report GHG emissions, so this is not done except for research purposes.

While OVERSEER has always intended to remain aligned with National Inventory methods, annual changes in the National Inventory method and annual changes in the development and improvement of OVERSEER has resulted in an element of drift. This issue has been recognised and is being addressed.

**F10.13 A point of obligation at the farm level would require monitoring, verifying, and enforcing compliance for a large number of small emitters. Carrying out this process for all emitters would likely be costly and difficult. Modifying this approach by, for instance, limiting a requirement for farm-level reporting to farms larger than a certain threshold could help to minimise these transactions costs.**

**29 Comment:**

The options described for Point of Obligation being at Farm level or Processor level, should not be limited to simply farm size, and farm type, but also provide for a hybrid scheme for farm level reporting based on expediency for reporting. This would assist in allowing suitable timeframes for developing increased capacity for delivering detailed OVERSEER Nutrient Budgets to a much larger number of farms.

For example, a small dairy farm required to complete a detailed OVERSEER Nutrient Budget as part of regional council compliance and/or as part of dairy industry stewardship is already well placed to be included at farm level reporting using OVERSEER, at little additional cost.

A large extensive sheep & beef property not required to complete a detailed OVERSEER Nutrient Budget as part of regional council compliance or industry stewardship, may be better placed to be accounted for at farm level using a 'look up table' approach or simplified model approach, but retaining the option to report at farm level using a detailed OVERSEER Nutrient Budget should that be considered an advantage.

A hybrid scheme including both processor level and farm level assessments, based on farm size or farm type may be complicated if double accounting or missed farms are to be avoided.

## **Chapter 10 – Land use**

### **Recommendations**

**R10.3 Agricultural emissions should be fully included in the New Zealand Emissions Trading Scheme (NZ ETS).**

**30 Comment:**

For agricultural emissions to be fully included in ETS, requires protection for trade exposed business and provision for intensity-based measures which support interests in 'food security'. Consideration should be given to transition times, development of capability, complementary government policies etc.



**R10.4 To address potential effects on emissions leakage and international competitiveness resulting from including agriculture in the NZ ETS, the Government should provide free allocation of NZUs to cover a large majority of agricultural emissions, based on their historic level. The Government should withdraw these allocations over time as the stringency of agricultural emissions policies increases overseas and the availability of mitigation options increases; and to be consistent with New Zealand transitioning to a low-emissions economy by 2050.**

**31 Comment:**

Free allocation for agricultural emissions included in ETS, for protection of trade exposed business is supported. It is supported that withdrawal of allocation over time should be subject to viable mitigations being available and international competitors also being accountable for GHG emissions. Sufficient timeframes and signals for the reduction of free allocation to provide for business confidence, planning and response is also required.

**R10.5 Unless and until there is a better alternative, the Government should use OVERSEER to monitor emissions at the farm level. The Ministry of Primary Industries should undertake work with AgResearch and the Fertiliser Association of New Zealand to further improve the capabilities of OVERSEER as a tool for modelling farm-level emissions. The improvements should capture as far as possible the full range of on-farm actions that can reduce emissions.**

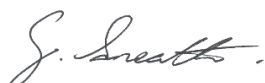
**32 Comment:**

Consideration should be given to capability to deliver robust nutrient budgets to all farms in New Zealand within the timeframes required for the Paris agreement. There are good arguments for a hybrid reporting system with OVERSEER Nutrient Budgets providing a detailed farm specific estimate of GHG emissions where the detailed assessment is warranted.

## **Concluding Comment**

Thank you for the opportunity to comment and provide feedback on the Draft report –

“Low Emissions Economy”



Greg Sneath

Executive Manager

The Fertiliser Association of New Zealand

8 June 2018