

Department of Agriculture, Fisheries and Forestry

Thank you for the opportunity to provide our perspectives on how Australia can help to transition its economy to net zero emissions by the year 2050.

We are grateful for your attention on this important policy area, and we are pleased to contribute our learnings in the agriculture and land space to assist in the development of an Agriculture and Land Sectoral Plan that is ambitious but achievable.

Introduction

The use of *Asparagopsis*-based feed supplements is supported by a licence through FutureFeed, [REDACTED] efficacy is underpinned by world-leading fundamental scientific research by CSIRO, James Cook University and Meat and Livestock Australia. This research has also been replicated by universities and research institutes at the forefront of agricultural research in Australia, New Zealand, the USA and across Europe demonstrating not only the methane abatement efficacy of *Asparagopsis*-based supplements, but also food safety, animal welfare and improved livestock productivity. [REDACTED]

Key statistics: Methane

To reduce greenhouse gas emissions, we need to reduce methane, which is earth's second-most abundant greenhouse gas after carbon dioxide. Although methane has a shorter

¹ Kinley RD, Martinez-Fernandez G, Matthews MK, de Nys R, Magnusson M, Tomkins NW, "Mitigating the carbon footprint and improving productivity of ruminant livestock agriculture using a red seaweed" (2020) 259 *Journal of Cleaner Production* 120836.

atmospheric half-life than carbon dioxide, it has approximately twenty-eight times the warming impact over a 100-year timeframe.²

The agriculture and land sector is the primary source of global methane emissions, with 43.5% of the global output of methane caused by agriculture, primarily through enteric fermentation in ruminant animals (e.g., cattle and sheep). The potency of this source of greenhouse gas cannot be overstated; by way of comparison, the world's 1 billion cattle and 1.2 billion sheep produce more greenhouse gases than the entire global transportation sector. In Australia alone, the agriculture sector is responsible for over half of the nation's methane emissions, and 69.3% of these emissions arise from livestock production.³

There is significant potential of supplements [REDACTED] to reduce these greenhouse gas emissions and this means that supplements are a key to unlocking net-zero emissions in the Australian agriculture and land sectors.

Key statistics: Asparagopsis and [REDACTED]



In addition, there is significant potential for Australian companies such as [REDACTED] to contribute not only to Australian methane-abatement goals, but to global methane-abatement goals. According to CSIRO, if just 10% of global cattle and sheep producers adopted *Asparagopsis*-based supplements as a feed ingredient for their livestock, it would have the same impact on our climate as removing [100 million cars from the transport sector](#). The potential increases in livestock productivity resulting from the use of *Asparagopsis*-based supplements could also produce enough food for an additional 23 million people. However, the success of Australian innovation going global depends on the Australian government taking a leadership position locally to foster a new and innovative industry within our own country.

The need for higher ambition

Australia is well positioned to become a global leader in livestock emissions reduction. Demonstrating the sustainable sourcing of products will become business as usual for agricultural production given the growing expectations of consumers, capital markets and supply chains globally. By using methane-reducing livestock supplements such as [REDACTED] Australian livestock producers can contribute to the creation of global low-emission value chains and benefit from the commercial opportunities that these chains represent.

² Alejandra Borunda, 'Methane: The other important greenhouse gas', *National Geographic* (Web Page, 24 January 2019) <<https://www.nationalgeographic.com/environment/article/methane>>. See also: 'Methane emissions', *European Commission* (Web Page) <https://energy.ec.europa.eu/topics/oil-gas-and-coal/methane-emissions_en>.

³ 'Agriculture's contribution to Australia's greenhouse gas emissions', *Climate Council* (Web Page, 15 June 2021) <<https://www.climatecouncil.org.au/resources/australia-agriculture-climate-change-emissions-methane/>>.

Crucially, feed supplements reduce emissions while preserving our primary industries and food production, avoiding the need for substantial changes from producers and consumers. Livestock farmers can continue with the production of high-grade Australian food products, and consumers can continue to enjoy these products with the added benefits of greenhouse gas emissions reduction. This offers an opportunity to support industry and communities while meeting the Australian public's demands for carbon reduction.

The [export-oriented](#) Australian agriculture industry will be in a position to broaden and expand global market access if it can enhance its low-emissions production systems. Given [REDACTED] has the potential to reduce the enteric methane emissions of livestock by 80% on farm, it and other livestock feed additives have an essential role in emissions reductions across global value chains. From a commercial standpoint, consumers are also choosing lower-impact products, and evidence is growing that many are prepared to pay a small [premium](#) to mitigate climate change. If we act now to become frontrunners in the decarbonisation of the global livestock industry, we could access new export markets that have an increasing appetite for low-emissions livestock products.

Importantly, inaction poses a risk to export market access, global competition and implementation of the Carbon Border Adjustments Mechanism (CBAM), particularly in the agriculture sector. The USA, a key strategic competitor in the livestock industry, uses less energy for the production of beef and is ahead of Australia in reducing agricultural [emissions](#).

[REDACTED] also supports ambitious emissions reduction efforts on account of being immediately effective and scalable. The impact of *Asparagopsis*-based supplements on livestock methane emissions is immediate, which would help food supply chains advance towards ambitions in line with global targets. Further, the cost to produce [REDACTED] will reduce as the scale of production increases to meet demand, making it easier for more farmers to access methane-reducing technologies without driving up prices for consumers.

[REDACTED]

[REDACTED] These product launches have provided real Australian consumer data on propensity to choose low emissions products over the standard offering and a willingness to pay a premium. But it has required niche market leaders and small, integrated supply chains to undertake these efforts.

What we know is today, without financial support or incentive, farmers cannot afford to adopt feed additives at meaningful scale. However, with scale comes a reduction in costs to producers of feed additives and with scale comes supply chain collaboration. Given the complex and fragmented supply chains of the beef and dairy industry, this cooperation will take many years and requires financial support in the short term. Government intervention is needed to support this ecosystem approach to adoption and to significantly increase the natural pace of progress.

As an example, we have seen the effect of the [Netherlands government's](#) hard line on methane and nitrous oxide emissions from its dairy industry. [REDACTED] has been engaged with the

Dutch government, a major Dutch dairy Cooperative and a leading agricultural university and has seen how government intervention has led to the development of a sustainability platform which rewards farmers with a milk premium the equivalent to €50/ tonne of carbon reduced from their efforts. The milk related products are then sold to Mars and Nestle at the same premium supporting the whole value chain.

It is our recommendation the government consider an approach which respects and includes farmers but which encourages [rapid adoption](#).

To date studies have demonstrated, abatement outcomes and food safety but have not been able to confirm at scale the production benefits necessary to offset the cost. From our discussions with leading bovine nutritionists the industry requires large scale >10,000 head trials in a number of different Australian climates to provide the statistical validity necessary for farmers to understand if feed efficiency or production improvements exist.

To support this [REDACTED] in conjunctions with the TFGA and other industry partners has been in discussions with the Tasmanian government to seek grant to support for commercial scale pilots of [REDACTED]. The details of this industry-backed proposal, encompassing Australia's first large-scale pilot using methane-reducing technologies, will be discussed in detail below.

Building on existing efforts and knowledge

To lower the agriculture sector's emissions profile, the government is supporting the development of the Australian seaweed farming industry, of which [REDACTED] is a part of, to produce methane-reducing livestock supplements. In addition, the government has already invested in the Methane Emissions Reduction in Livestock (MERiL) program, of which [REDACTED] has made a significant contribution. MERiL's objectives align with those of [REDACTED] with the funding is supporting pilots to validate supplement delivery technologies, quantify emissions reduction levels and determine the impacts on livestock productivity in grazing systems.

More broadly, companies such as [REDACTED] are eligible for large-scale funding through initiatives such as the National Reconstruction Fund (NRF). The NRF generally includes \$5M to \$15M of funding for eligible companies in the form of a loan, guarantee or equity. The government has categorised value-adds in the agriculture and food industries as an investment priority sector of the NRF, recognising the need to devote resources to this key battleground in fighting climate change. However, the NRF is competitive and will be decided primarily on the basis of commercial viability. This means that it may be skewed in favour of projects that achieve maximum commercial output and high economic returns rather than projects that would necessarily prove the most beneficial for a sustainable Australian future.

The government's along with international efforts to date have helped build the compendium of scientific evidence demonstrating the effectiveness of methane-reducing livestock supplements and the significant potential of these supplements to contribute to Australia's net-zero emissions goals. These efforts can now be built upon as discussed below.

Opportunities to reduce emissions - technology, practices and other measures

The most important point we'd like to make is, while the scientific data supporting methane-reducing livestock supplements is crucial, the real potential of *Asparagopsis*-based supplements can only be realised if these supplements are widely adopted. Widespread adoption of new methods and technologies requires trust, awareness in the science and sustained efforts to adapt existing behaviours.

To ensure that methane-reducing livestock supplements become viable for widespread adoption, the logical next steps for the government to take would be to demonstrate commercial effectiveness of these supplements through:

1. *Commercial-scale, long-term pilots*
2. *Farmers awareness and confidence*
3. *Supplementation of costs and export pathways*
4. *Science Based Target initiatives (SBTi) FLAG*

1. Commercial-Scale, Long-Term Pilots

Commercial-scale, long-term pilot data is the critical next step needed to dispel the livestock industry's uncertainties about widespread adoption.

As a beneficiary of MERiL funding, [REDACTED] has already begun demonstrating the commercial effectiveness of *Asparagopsis*-based supplements and their impact on methane emissions, livestock productivity and meat quality.

More trials similar to this one are needed to demonstrate scale and commercial advantage. Large-scale pilots will document farm productivity gains to provide evidence as to the commercial benefits. These benefits include improved cattle growth rates, increased beef and milk quality, and improved feed efficiency. Such pilots would also demonstrate animal health and food safety.

Large-scale pilots will also support farmers and producers to maximise the value of carbon-reduced or carbon-neutral meat or milk products, and the pricing thereof through supply chains. Finally, these pilots will ensure that product safety requirements are fully met at scale and that national guidelines into minimum residue levels are developed and approved to meet both domestic and export requirements.

Example of a proposed commercial Pilot - Tasmania

A key initiative for the Commonwealth government would be to support existing initiatives by co-partnering/co-investing with the proponents, state and territory governments that are considering commercial-scale *Asparagopsis*-based supplement pilots.

For example, on 31 October 2023, the Tasmanian Farmers and Graziers Association (TFGA) submitted an industry proposal to the Tasmanian government for Australia's first large-scale pilot using low-emissions feed technologies to reduce methane emissions from the dairy and beef sectors. The industry and academic partners associated with this proposed pilot include, the Tasmanian Institute of Agriculture, Fonterra, Annandale Dairy Farm, [REDACTED] and Tasmanian Feedlot (AEON).

All of the proponents of the proposed pilot are key stakeholders and research bodies within the agriculture sector. They understand that, at this point in the development cycle of an *Asparagopsis*-based feed additive, there is a need to obtain and make available results from a larger scale commercial feasibility study to increase farmer confidence in such products.

The 36-month pilot would involve building on the existing smaller-scale trials that are being conducted by the proponents. The pilot will increase the number of farms participating in [REDACTED] trials, thereby introducing the *Asparagopsis*-based supplement to an additional 2,800 dairy cattle and would also introduce the supplement to over 2,000 head of beef cattle at the AEON feedlots at Powranna.

It is not the recommended scale necessary but a start however, the proposed pilot if successful will be supported by the Tasmanian government, much of the funding would be obtained through both cash and in-kind support from industry and would initially see a total of more than 6,000 head of dairy and beef cattle being fed the *Asparagopsis*-based supplement.

A further opportunity for the Commonwealth government would be to support the scaling up of the pilot work to include between 8,000 and 10,000 head of dairy and beef cattle. This would ensure that the data and results collected were materially significant, not just in an Australian context but internationally as well. A larger-scale trial with 8,000-10,000 head of dairy and beef cattle using low-emissions feed technologies would provide independently verified data at a commercial scale on:

- Farm productivity;
- The quality of beef and dairy products;
- Product safety, which will assist in the establishment of required industry standards such as minimum residue levels;
- The emergence of carbon-reduced or carbon-neutral products that would attract premium pricing in Australia and overseas.

The results from the pilot would provide robust data across the entire supply chain that would be essential for farmers to more broadly adopt the use of low-emissions feed technologies in the coming years, by which time it is expected that commercial adoption incentives should become readily available. The purpose of this proposal is therefore to assist in delivering the additional data sets that will underpin confidence at the farm gate, support market development and provide a pathway to enable widespread adoption of this emerging technology thereby creating a Tasmanian-based outcome without the requirement for any government policy changes.

Aside from the longer-term benefits of increased commercial uptake, the pilot is also expected to result in the immediate, shorter-term benefits of:

- Initially reducing Tasmania's agricultural emissions by 28,000 tonnes (or 1% of the total 2.69M tonnes of Tasmanian agricultural emissions as reported in Tasmania's Greenhouse Gas Emissions Report 2022) by 2026; and
- Delivering reliable data that would heavily inform any legislative changes implementing the use of methane-reducing livestock supplements in the national carbon credits scheme.

Pilots such as this one are also compelling because they contribute to Australia's focus on developing a skilled national workforce and reversing the trend of failed Australian commercialisation of key technologies. Despite a solid skills base in the services sector, Australia has a track record of failing to successfully commercialise important innovations (e.g., WiFi and solar power) and, as such, has lost some of its brightest minds and potential technologies to other regions. The successful implementation of this pilot would help develop methane-abating technologies in-country and a climate smart Australian agricultural sector. As the sector grows, it would act as a beacon that in a regional employer and attracts skilled talent. This would create continued support for Australian science, research and development of technologies.

As a result, pilots such as this present valuable opportunities for the government to reap a myriad of benefits in the sector's emissions reduction, support for Australian farmers in understanding on farm considerations for implementation, as well as foster a culture of innovation in Australia.

We recommend that the Australian government find near-term ways to support the expansion of commercial pilots, such as those being considered by the USA, Canada by raising this issue in relevant intergovernmental forums and co-funding large scale pilots where appropriate. Funding of commercial pilots could occur via MERiL funding or other funding initiatives, such as the NRF but is urgently needed to support this emerging industry to contribute to the Australian agriculture industries decarbonisation.

2. Farmer awareness and confidence

Commercial pilots are the empirical basis for increasing farmers' awareness / confidence in *Asparagopsis*-based supplements. However, the results of the pilots need to be communicated via a coordinated effort towards raising awareness and education.

We recommend that the government coordinate outreach efforts across the states and territories, championing best practice adoption of new livestock feed-additive technologies such as *Asparagopsis*.

3. Supplementation of costs and export pathways

Farmers have expressed hesitation about the cost of adopting new technologies such as *Asparagopsis*-based supplements. Commercial pilots and strategic communication go some way to overcoming this barrier demonstrating that, although feed supplements add to farmers' cost base, they significantly improve the farmers' commercial prospects and environmental credentials.

Despite this, farmers may require financial support to front the initial costs of adopting the use of an *Asparagopsis*-based supplement. Government support to help farmers access fresh export opportunities from low-methane products would improve their commercial outlook and, as a result, their willingness to adopt methane-reducing technologies.

Another financial hurdle to widespread adoption stems from Australia's expansive pasture-based production systems, which create logistical challenges for delivering supplements to grazing livestock.

Improving ACCU eligibility

The government has a track record of ensuring the Australian Carbon Credit Unit (ACCU) Scheme remains fit for purpose in a climate of rapid change. Through the publication of the Method Development Interim Framework, it has also demonstrated its commitment to establishing a proponent-led method development process to give stakeholders the flexibility to develop or adapt new approaches to greenhouse gas reduction.

Feed supplements are currently not eligible for ACCUs under the existing categories of methodology under the Emissions Reductions Fund (ERF). Improving the eligibility of feed supplements for ACCUs will play a key role in incentivising our farmers to adopt this methane-reducing technology, as it provides a significant financial incentive for adoption. We are currently assisting an independent taskforce to develop a livestock feed additives methodology for submission to the Clean Energy Regulator (CER) and Minister Bowen. This submission will assist in amending the existing methodology to include [REDACTED] and feed supplements.

It is expected to take a minimum of two years to implement this methodology change, from the initial drafting to legislation. We stand ready to collaborate with the taskforce, the CER, ERAC, DCCEEW and any other involved parties to progress this process.

We are concerned that the complexity and time required for the CER to adopt or vary new methods will deter industry from making the most of the currently available technologies that can reduce emissions.

Importantly, the 'newness' requirement under the ERF will mean that any early adopters of [REDACTED] will not be able to access ACCUs in the future if [REDACTED] is eventually included as an eligible method for ACCUs. This unfairly penalises early adopters, despite them having the best interests of emissions reductions at heart. Therefore, it is crucial to deal with the newness requirement appropriately.

A solution to this problem could be the introduction of an interim and transitional mechanism that would exempt early adopters of [REDACTED] and feed supplements from the newness requirement. An example of this is the Notice of Intent arrangements under the Carbon Farming Initiative between 2014 and 2015.⁴ This would offer certainty to the industry and bridge the gap between now and when the methodology change is implemented under the ERF to include [REDACTED] and feed supplements.

We recommend that, as identified by the Chubb Review, there be a simplification of the methodology variation process and that the process be proponent-led, amongst its other recommendations including building the resources within the CER to support the administrative burden.⁵

We recommend that the Commonwealth government support changes to the methodology to include *Asparagopsis*-based feed for eligibility of ACCUs under the ERF. Additionally, we recommend that the Chubb Review be implemented in full to improve and streamline the process for methodology variations in the near term.

We also recommend that the Commonwealth government provide a solution to the newness requirement such that early adopters of *Asparagopsis* can access ACCUs in the future and are not penalised for early adoption. This would take the form of a relatively simple legislative change in the Notice of Intent (similar to the Carbon Farming Initiative in 2014/15).

4. Science Based Target initiatives (SBTi) - interplay with carbon credits

Many large corporations are signing up to reduce emissions across their value chains and setting targets accordingly. SBTi is an international body that offers companies a structured way to set emissions reduction targets across the spectrum of Scope 1, 2 and 3 emissions. Targets are sector-specific, and SBTi issues guidance for the agriculture and land sectors (FLAG). SBTi also assesses whether or not an organisation's climate targets are compatible with the Paris Agreement's goals. The SBTi is comprised of the United Nations Global Compact, the World Resources Institute, the World Wildlife Federation and the CDP, a global environmental disclosure organisation. Notably, large corporations active in Australia, including Woolworths, Coles and McDonalds, have set targets that have been ratified by SBTi.

By contrast to the 'offsetting' of emissions enabled by ACCUs, the SBTi explicitly excludes counting carbon credits as reductions towards meeting science-based targets (see SBTi Corporate Net Zero Standard - Criterion 12). Rather, SBTi dictates that companies should only account for reductions that occur within their operations and value chain (i.e., absolute reductions). This shows SBTi's focus on avoiding carbon credits from being used as a

⁴ *Carbon Farming Initiative Amendment Act 2014* (Cth) sch 1 cl 388B-388C.

⁵ Chubb, I., Bennett, A., Goring, A., Hatfield-Dodds, S., 2022, 'Independent Review of ACCUs' (Final Report, Department of Climate Change, Energy, the Environment and Water, December 2022)
<<https://www.dcceew.gov.au/sites/default/files/documents/independent-review-accu-final-report.pdf>> 4.

substitute for actual emissions reduction. In short, companies cannot buy carbon credits and claim these credits as a reduction to their SBTi targets.

██████████ can assist organisations to meet SBTi targets as follows:

- For a primary producer, ██████████ can contribute to reducing Scope 1 (i.e., on-farm) emissions through the use of its methane-reducing livestock supplement; and
- For a retailer, ██████████ can contribute to reducing Scope 3 emissions (i.e., emissions of suppliers/farmers).

We recommend that given the increasingly recognised role of the SBTi, it is important for the government and SBTi to clarify the interplay between the SBTi, which expressly excludes carbon credits from its targets initiative, and ACCUs in Australia.

██████████ thanks you for the opportunity to contribute to this process and we look forward to supporting the development of the Agriculture and Land Sectoral Plan in any way possible.

Yours sincerely,

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