Australian Dairy Industry Council Inc.

29 October 2014

Submissions
Climate Change Authority
GPO Box 1944
Melbourne VIC 3001
Via email: submissions@climatechangeauthority.gov.au

Dear Climate Change Authority,

CARBON FARMING INITIATIVE REVIEW

I take this opportunity to provide the Authority with a copy of the dairy industry's submission on the Emissions Reduction Fund Green paper, and ask that our comments on the Carbon Farming Initiative (CFI) in this submission be considered as part of your current review.

I draw your attention to section 6 of the submission "Building on the Carbon Farming Initiative" on pages 14-15, but also note we have commented on the CFI in other parts of the submission as well.

I would particularly emphasise the comments in the attached submission about the crediting period of seven years with no ability to seek additional funding at completion the project. Under the previous CFI arrangements, the 'positive' list provided some scope for projects to remain eligible beyond the seven year period. With no mechanism to encourage the continued operation of an abatement project, this is likely to create further barriers for dairy farmers to participate given the high set up costs involved for some projects.

Thank you for considering the views of the dairy industry in ensuring Government schemes are designed to support Australian dairy in continuing to reduce its greenhouse footprint, as well as reducing production costs linked to emissions.

Yours sincerely,

Irene Clarke
Senior Policy Manager

Level 2, Swann House, 22 William Street, Melbourne, Victoria, 3000 AUSTRALIA
Telephone: +61 3 8621 4250 Facsimile: +61 3 8621 4280
ABN: 76 673 412 879

Australian Dairy Industry Council Inc.

Australian Dairy Industry Council

submission in response to the

Emissions Reduction Fund Green Paper

21 February 2014

Contents

Australian Dairy Industry Council

The Australian Dairy Industry Council (ADIC) is the national peak policy body for the Australian dairy industry and represents all sectors of industry on issues of national and international importance.

Our member organisations – the Australian Dairy Farmers Limited and the Australian Dairy Products Federation - represent the interests of dairy farmers, manufacturers, processors and traders across Australia.

The ADIC's role is to bring together these members to establish a unified dairy position on issues that affect the industry's future across the entire value chain.

ADIC Contacts

Noel Campbell
ADIC Chair

Natalie Collard
Chief Executive

Address:
Australian Dairy Industry Council
Level 2 Swann House
22 William St
Melbourne Vic 3000
Ph: 03 8621 4200

Executive Summary

Australian dairy is a $13 billion farm, manufacturing and export industry directly employing 43,000 Australians and indirectly providing a livelihood for more than 100,000 people in dairy related service industries. Australia's 6400 dairy farms produced 9.2 billion litres of milk last year.

Compared to other primary producers, Australian dairy is disproportionately exposed to electricity costs due to its high power requirements for milking machinery, cool milk storage, and milk processing.

The dairy industry recognises that growth to meet increasing international demand for dairy products may impact on its greenhouse emissions. Even with such growth potential, the dairy industry has an ambitious target to reduce emissions intensity by 30% by 2020.

The Emissions Reduction Fund (ERF), if appropriately designed, will support Australian dairy in continuing to reduce its greenhouse footprint, as well as reducing production costs linked to emissions.

Energy efficiency is a significant opportunity. For example, if 20% of dairy farms installed heat recovery units, the annual carbon savings collectively would be 16,640t a year, or more than 2% of total dairy farm energy-related emissions. Plant upgrades in milk factories also have significant potential for carbon savings, as demonstrated by projects supported by the Clean Technology Fund which will reduce emissions intensity by up to 90% at some plants.

The dairy industry proposes that the ERF include the following features:

1. Sector or activity funding bands, to enable energy-intensive agriculture sectors (farming and processing) to access the ERF. Banding is also more likely to facilitate aggregated bids covering a range of energy efficient options of varying carbon abatement costs.

2. Funding dedicated to a national energy efficiency scheme along the lines of State 'white certificate' schemes such as the Victorian Energy Efficiency Target, to reduce transaction costs for aggregated carbon abatement for industries such as dairy with many small to medium enterprises.

3. An emissions intensity methodology and baselines approach based on emissions per unit of production.

4. Flexible baselines determined on the basis of emissions over an historical period of time, to account for fluctuations in production due to changing market and seasonal conditions.

5. Standard contracts for carbon abatement under the ERF, noting that more information is required on the terms.

6. Contracts for carbon abatement for longer than the proposed five years, to maximise the incentive to invest in energy efficiency and reduced enteric emissions.

7. The establishment of an agricultural technical working group, to consider the methods and rules for reducing energy intensity and improving energy efficiency opportunities for agriculture (in both farms and related processing), research and development of additional CFI methodologies, and appropriate aggregation and other models to enable agriculture to participate fully in the ERF.

Introduction

Australian dairy is a $13 billion farm, manufacturing and export industry directly employing 43,000 Australians and indirectly providing a livelihood for more than 100,000 people in dairy related service industries. Australia's 6400 dairy farms produced 9.2 billion litres of milk last year.

Australian dairy recognises that its potential for growth may impact on its greenhouse emissions. Even with its growth potential, the industry has an ambitious target to reduce emissions intensity by 30% by 2020. There is a strong link between the industry's use of electricity and its drive to reduce emissions intensity. This will be a challenge if the industry is to meet government growth targets, such as the Victorian Government's policy aim to double agricultural output by 2030.

The Australian dairy industry therefore takes a close interest in national and state greenhouse emissions reduction policies. The ERF, if appropriately designed, will support the dairy industry in continuing to reduce its greenhouse footprint, as well as reducing production costs linked to emissions, such as electricity.

The Australian dairy industry's emissions profile

Australian dairy farms account for around 1.6% of Australia's total greenhouse gas emissions, emitting an estimated 9.3 million tonnes of CO_2e a year.[1] Collectively, Australia's five largest milk processing companies account for around 80% of all milk manufacturing and emit around 1,327,500 t/CO_2e a year (445,500 t/CO2e directly and 882,000 t/CO2e indirectly)[2].

1. Electricity consumption

Electricity consumption accounts for about 8% of greenhouse gas emissions linked to Australian dairy farms; this equates to about 740,000 t/CO_2e a year[3]. Compared to other primary producers, dairy is disproportionately exposed to electricity costs due to the industry's high power needs in milking machinery, cool milk storage, and intensive milk processing procedures

ABARES[4] has identified that electricity accounts for 2.4% of total dairy farm operating costs, compared with 0.8% in livestock/cropping enterprises. This is because electricity is dairy farming's main energy source, not the transport fuels on which cropping, sheep and beef grazing rely.

Energy usage patterns and costs over time are highly complex, and highly individual to each farm or manufacturing business. They reflect factors such as:

- The manufacturer's product mix – for example the relatively higher emissions from powder production compared to those of cheese
- Size of the herd, and type of milking system (e.g. rotary milking platform or herringbone)
- Dairy production systems, whether seasonal or milking all year around
- Age and operating efficiency of plant such as milking machines and refrigeration
- Seasonal conditions, which may affect the timing and number of cows milked
- Seasonal conditions, which may affect the timing and extent of pumping for irrigation
- Changes to more energy-intensive irrigation technologies in order to meet environmental policy objectives directed at reduced water use

[1] Christie, KM, *et al.* (2012). 'Whole-farm systems analysis of Australian dairy farm greenhouse emissions', *Animal Production Science, 2012,* **52,** 998-1011.
[2] Clean Energy Regulator, 'Greenhouse and Energy information 2011-2012'.
[3] Christie, KM, et al. (2012). 'Whole-farm systems analysis of Australian dairy farm greenhouse emissions', Animal Production Science, 2012, 52, 998-1011.
[4] ABARES (2011). Whittle, L, Hug, B, Heyhoe, E, Ahammad, H & Berry, P. 'Possible short-run effects of a carbon pricing scheme on Australian agriculture', ABARES research report 11.10, December, Canberra, p4.

- Upgrades or efficiency measures undertaken to reduce consumption and therefore costs
- Renegotiation of tariffs or contracts with energy companies to reduce costs.

Analysis[5] commissioned by Dairy Australia indicates that dairy farmers are now typically[6] spending between $35 and $75 a day on electricity to power their dairies, compared to between $20 and $45 a day in 2010[7]. Dairy farms with irrigation are paying significant additional costs for their daily power use. One farmer has reported that their high pressure irrigation system accounts for up to two-thirds of their total power use and this may be costing up to $700 a day on electricity for the irrigation alone. Rising tariffs, rising network and service charges, and environmental levies such as the carbon price and renewable energy incentives schemes have contributed to daily electricity costs rising 33-100% for many farms since 2010.

Large dairy farms with milking herds of more than 600 cows[8] are paying between $75 and $300 a day for power at the dairy shed, up from between $50 and $150 in 2010. Daily energy consumption over the period has remained fairly steady.

The analysis commissioned by Dairy Australia[9] shows that some farmers, particularly in Victoria, have been able to reduce or negate the effects of the rising tariffs by joining group supplier schemes or directly negotiating a better deal with their power company. However, most Australian dairy farmers have seen their overall energy bills rise substantially, even when their energy consumption has remained much the same.

The analysis also indicates that while some dairy farmers have been able to manage costs through negotiating better deals on tariffs, few have taken a comprehensive approach to significant improvements in their energy efficiency. Large, up-front capital costs for equipment upgrades and renewable energy options, tight margins, and long payback periods are the main barriers.

These findings underline the potential for improved energy efficiency as the next big step-change for dairy farmers to address rising energy costs and reduce the industry's greenhouse footprint.

The industry is a large user of both electricity and gas in manufacturing. Collectively, Australia's five largest milk processing companies account for around 80% of all milk manufacturing and emit around 1,327,500 t/CO_2e a year (445,500 t/CO2e directly and 882,000 t/CO2e indirectly)[10]. This places some dairy companies among the top 300 energy users in Australia, and therefore liable for the carbon tax. Their international competitiveness is highly sensitive to changes in energy costs.

Dairy farming and manufacturing, like most agriculture sectors, is a price taker in domestic and international markets and unable to pass any energy cost increases on to consumers.

2. Livestock

Almost two-thirds of dairy farm emissions are enteric (intestinal) methane. Dairy Australia in conjunction with the Victorian Department of Environment and Primary Industries, Meat and Livestock

[5] Dairy Australia, 2013: 'Carbon Abatement Project, Section A: Analysis of dairy shed energy bills', NBA Consulting; 'Analysis of power price increases in Tasmanian Dairies 2008-2013, Vaurena Pty Ltd.

[6] Farm size in range of 250-400 milking cows, which is typical of around 50% of farms.

[7] Daily dollars rates reflect the range of State medians; some individual farmers are now paying up to $140 a day, while others are still paying $20 a da.y

[8] Around 10% of Australian dairy farms have milking herds larger than 600 cows.

[9] Dairy Australia, 2013, *Ibid.*

[10] Clean Energy Regulator, 'Greenhouse and Energy information 2011-2012'.

Australia and the Federal Government is investing in research to identify practices to reduce enteric methane emissions.

As an example, experiments at the Centre for Dairy Excellence at Ellinbank in Gippsland, Victoria, have found that including crushed wheat in dairy cows' diets can increase milk yield while nearly halving methane emissions per kilogram of milk[11]. There is also some potential, albeit limited to many dairy producers, to achieve carbon credits through a methodology for reducing greenhouse gas emissions by feeding dietary fats to milking cows, which was registered under the Carbon Farming Initiative in August 2013[12].

However, the challenge for dairy farmers is balancing the increased costs associated with feed supplements (for example, capital costs for feeding infrastructure and increased management complexity) against the potential production and environmental benefits. Further research and testing is required for farmers to be confident about these costs and benefits. This will be discussed in more detail in the context of the ERF later in this submission.

Dairy Australia in partnership with the Federal Government also has a significant commitment into research to reduce nitrous oxide emissions from dairy pastures and urine patches. Nitrous oxide emissions, both direct and indirect, represent 25% of the greenhouse gas emissions from dairy farming systems. There is potential for reduced nitrous oxide emissions and improved profitability through greater adoption of current best practice reactive nitrogen fertiliser management. Only a small percentage of Australian dairy farmers and their advisors currently understand and implement best practice nitrogen management[13].

3. Emissions intensity

Emissions intensity through the dairy supply chain, from paddock to processing, is an important consideration, particularly in the context of state and national policy frameworks intended to encourage rapid growth in agricultural output[14].

While absolute emissions reduction provides a measure of emissions activity at a particular time, an approach to reduce emissions intensity provides a measure of long-term impact relative to production. This is particularly relevant for the agriculture sector and dairy in particular, given the strong expectation that production will increase in the coming years to meet growing global demand.

Sustainable intensification of agriculture with increased production over time is a realistic scenario for Australia. However, it is not possible to keep cutting back absolute emissions with a growing industry. The dairy industry is therefore focused on reducing emissions intensity throughout the supply chain, with the industry's current stated target to reduce emissions intensity by 30% by 2020. It is worth noting that the New Zealand Government has approached its coverage of agriculture in its Emissions Trading Scheme (ETS) using an emissions intensity approach. As the New Zealand dairy industry is a major competitor to the Australian dairy industry, ensuring that Australian industry can compete on a comparable basis is important to our global competitiveness.

---

[11] 'Wheat works wonders for Victorian dairy cows', media release, Victorian Agriculture Minister, Peter Walsh, 23 October 2013. http://www.premier.vic.gov.au/media-centre/media-releases/8189-wheat-works-wonders-for-victorian-dairy-cows.html

[12] Reducing greenhouse gas emissions in milking cows through feeding dietary additives, Department of Environment. http://www.climatechange.gov.au/reducing-carbon/carbon-farming-initiative/methodologies/methodology-determinations/reducing-greenhouse-gas-emissions-milking-cows-through-feeding-dietary-additives

[13] Watson, P; Watson D. Dairying for Tomorrow survey of NRM practices of Australian dairy farmers. http://www.dairyingfortomorrow.com/index.php?id=27

[14] For example, the National Food Plan goal to increase the value of Australia's agriculture and food-related exports by 45% in real terms by 2025 and, the Victorian Growing Food and Fibre initiative aim to double agricultural production by 2030.

More productive and efficient use of energy

Energy efficiency is a significant opportunity for reducing energy costs as well as greenhouse emissions in the dairy industry given the industry is a large user of electricity on farm and of electricity, gas and other fuel sources in manufacturing. On-site energy generation technologies can also be used to supplement energy efficiency (such as cogeneration or solar PV or solar thermal).

Dairy farmers are already embracing renewable energy technologies, with 40% of farms in 2012 having installed some form of renewable energy installation. Renewable technologies installed on farms include heat pumps (18%), solar water heating (15%) and solar PV panels (15%)[15].

Dairy farmers have also been quick to take up 1700 energy assessments co-funded through Dairy Australia and the Federal Government's Energy Efficiency Information Program. The audits are identifying many zero or low cost energy efficiency and energy reduction opportunities, as well as options that are more expensive but have significant cost savings and greenhouse gas abatement.

Unfortunately, the previous Clean Energy Policy did not provide much in the way of incentives for dairy farmers to invest in these energy efficiency measures and several state rebate programs are no longer being funded[16].

At the same time, state 'white certificate' schemes to improve energy efficiency, such as the Victorian Energy Efficiency Target (VEET), have been of limited value because they do not include many dairy-relevant energy efficient technologies on their eligible discount lists. In addition, these schemes are now under review with uncertainty about their future.

Dairy manufacturers are embracing new technology. For example, dairy manufacturing projects that were part of the Clean Technology Food and Foundries Investment Program in the 2012- 13 year included more than $25 million of investment in equipment upgrades including installing heat exchange, solar PV and/or gas alternatives for water heating and power, and some major equipment upgrades for refrigeration and lighting.

Investment in new technology and alternative energy is expected to reduce emissions intensity at some dairy plants by up to 90%. Unfortunately this Clean Technology program is now closed and comparable investment in these types of projects is unlikely to continue. Given the lag time since this Program was closed in October 2013 and the ERF becoming operational there is a funding gap that has been created, causing uncertainty to dairy manufacturers and the likelihood that additional emissions reduction activities will not proceed. This requires special consideration by the Government, particularly given those dairy manufacturers with a direct liability under the existing carbon pricing legislation continue to pay this tax to the Federal Government.

The emerging question is how to finance large, up-front capital costs for equipment upgrades and renewable energy options in tight economic conditions.

The ERF, if appropriately designed, could be an opportunity for the dairy industry to continue or even ramp up its programs supporting the reduction of greenhouse gas emissions intensity and at the same time improve returns by reducing its energy costs. Improved margins are critical if the industry is to increase production and exports as envisaged under policy frameworks such as the National Food Plan or the Government's development of an agricultural competitiveness White Paper in 2014.

[15] 2012 Dairying for Tomorrow Survey of Natural Resource Management on Dairy Farms. Dairy Australia.

[16] For example, the Energy Efficiency for Small Business scheme in NSW, active between 2009 and 2012, in which up to $5000 rebates were available to small and medium sized businesses.

Renewable energy technologies are another important part of the mix to reduce dairy industry costs and its greenhouse emissions footprint. The industry therefore has an interest in the review of the Renewable Energy Target (RET), particularly the Small-scale Renewable Energy Scheme (SRES).

There may be other opportunities for the Federal Government to support the dairy industry in its energy efficiency opportunities. For example, a higher rate of accelerated depreciation on new energy equipment could assist in reducing the payback period while also spreading the Government support over a number of years.

It is not apparent to what extent the development of the ERF is taking into consideration other reviews currently underway, including the RET review and the Energy White Paper. Given the policy crossover of these reviews, ADIC submits that these related reviews must be progressed together and aligned in order to reach sensible and efficient outcomes and avoid conflicting policy directives.

Potential carbon savings from improved dairy energy efficiency

1. Dairy farms

Analysis commissioned by Dairy Australia[17] examined the opportunities for improved energy efficiency on a total of 109 dairy farms across all states and the associated potential $/t$CO_2$e cost for emissions savings. The farms analysed had all participated in the energy assessments co-funded through Dairy Australia and the Federal Government's Energy Efficiency Information Program.

These assessments identified many zero or low cost energy efficiency and energy reduction opportunities, as well as options that are more expensive but have significant cost savings and greenhouse gas abatement.

However, upfront capital costs and payback periods longer than five years are major barriers to increasing the uptake of energy efficiency equipment such as gas replacement for hot water, heat recovery units and new technology lighting. Upfront capital costs are also a barrier to increased uptake of renewable energy technologies.

In the analysis commissioned by Dairy Australia, the potential $/t$CO_2$e for carbon credit associated with different options varied considerably across the states, depending on the National Greenhouse Accounts conversion factors for displaced electricity consumption.

For example, the potential $/t$CO_2$e for carbon credits associated with energy efficient equipment in Tasmania are much higher than on the mainland due to Tasmania's high reliance on hydro-electricity power compared with more greenhouse-intensive electricity generation sources on the mainland.

The review identified those projects most likely to be attractive to dairy farmers without any external funding incentives, i.e. with a payback period less than five years. It found, for example, heat recovery units could be installed at 58 of the 101 mainland farms, with an average three-year payback and total savings of 919t/CO_2e per year.

However, the analysis then considered the difference if farmers could access incentives up to 50% of project costs to a maximum $5000[18]. It showed that heat recovery units became an attractive project for 89 of the 101 farms. The funding support reduced average payback to 2.7 years and generated total emissions savings of 1210t/CO_2e per year (or ~13t per farm). The total cost of the government contribution would be $385,500 translating to $21t/$CO_2$e saved.

[17] Dairy Australia 2013, *Ibid.*

[18] Based on the now defunct NSW Energy Efficiency for Small Business scheme.

In another example, gas replacement for hot water was attractive to 29 farms with no financial support, with an average payback of 2.6 years and saving a total of 595t/CO_2e a year. With government support as described above, gas replacement became attractive to 53 farms, with an average payback period of 2.9 years and total savings of 1094t/CO_2e a year. The total cost to government would be $181,500 or $11t/$CO_2$e saved.

While the carbon abatement per project on each farm seems small, Australia has 6400 dairy farms. If 20% of farms installed heat recovery units, the annual carbon savings collectively would be 16,640t per year, or more than 2% of total dairy farm energy-related emissions.

2. Dairy manufacturing

As noted above, dairy manufacturers are embracing new technology. Some of these investments are going ahead with support from the Federal government. With a proposed investment in dairy manufacturing equipment upgrades of $25,785,485 supported by a government contribution of approximately $8m from the Clean Technology Food and Foundries Investment Program.

These dairy factory projects can provide significant emissions reduction. A Fonterra Australia project proposes to replace cheese vat heating equipment at Fonterra's Wynyard factory and this is expected to reduce the carbon emissions intensity of the cheese vat equipment by 90% and provide savings of $141,000 per year in energy costs. In another example, equipment upgrades at the Lion Dairy Chelsea facility are expected to reduce the air compressor emissions intensity by 34% and the chiller system emissions intensity by 25%.

Some dairy companies had submitted funding bids under the Clean Technology Program, but the decisions on the applications were not announced before the new government closed the program in 2013. The uncertainty following the closure of the program and the uncertainty about the opportunities of the ERF, together have created an environment of investment uncertainty and prevented continued investment in clean technology projects. ADIC notes that some companies have scoped possible projects that may be able to proceed with some support and could offer an early opportunity for the ERF to support dairy industry emissions reduction, if the Fund is designed to support projects such as this.

Responses to questions in the Emissions Reduction Fund Green Paper

Crediting emissions reductions

Views are sought on how best to:

- Ensure that emissions reductions are genuine
- Develop methods for calculating emissions reductions from priority activities
- Facilitate the aggregation of emissions reductions across projects and activities.

Genuine and additional reductions

Emissions reduction through improved energy efficiency in the dairy industry will be genuine and additional. However, as indicated on the previous page, many projects would not be undertaken without government support to purchase the associated carbon credits.

Further, the industry is concerned that the difficulty of measuring absolute emissions from livestock will preclude the industry from participation in the ERF. The fact that diffuse emissions (especially methane and nitrous oxide from the grazing industries) are not able to be directly measured needs to be taken into account.

For the dairy industry to reduce emissions other than those associated with energy usage, the ERF will need to recognise changes in management practices from which emissions reduction can be estimated. A significant body of published science exists that identifies dairy production management practices that are currently not standard practice, but if adopted, would result in genuine emissions reduction.

A key principle for the ERF is purchasing lowest-cost abatement. Unless projects based on a reduction in emissions intensity are considered, it is likely that the cost of abatement in the land sector will be higher than abatement generated in the industrial and energy sectors. Without low-cost abatement strategies, the ERF Green Paper is likely overstating the opportunities for the land sector.

With the reduction in research into Carbon Farming Initiative (CFI) methodologies with the repeal of the carbon tax, it may take considerable time and effort for the dairy sector to identify cost-effective opportunities for absolute reductions in greenhouse gas emissions. However, opportunities exist to reduce emissions intensity per unit of product.

Methodologies

We propose that measures for improving energy use efficiency conform to existing methodologies for estimating emission reductions through the CFI, the National Greenhouse Accounts, the Clean Technology Fund and other programs such as the state white certificate schemes.

Apart from improving energy use efficiency, the only means by which the dairy industry can reduce emissions without constraining food production is through a methodology based on emissions per unit of food produced. Such a methodology could be based on a baseline and credit scheme. For example, a scheme could set emission reduction targets per unit of product, with the baseline being set at ‘current best practice’.

Under such a scheme, an independent science committee could determine the deemed emissions per kg of milk solids from a range of management practices to establish current best practice baselines. A review every five years would allow for continuous improvement in emissions intensity while providing a degree of investment certainty. The modelling underpinning the determination of emissions saving would be based on National Greenhouse Gas Inventory emissions factors and the latest peer reviewed science. Standardised Greenhouse Gas Inventory figures have been an important reference to date.

The advantage of a methodology based on an emissions baseline per unit of product is the flexibility it provides for an individual business. For example, a possible measure for processors could be greenhouse gas emissions per litre of milk processed, annually adjusted for agreed product mix impacts. Methodologies based on the adoption of a single practice may reduce the resilience and long-term profitability by encouraging a focus on one aspect of the business, without consideration of the long-term implications for profit.

An example is a pasture-based dairy business that responds to signals to reduce emissions by increasing the percentage of concentrates in the diet. Managing the transition from a pasture-based diet to a higher percentage of concentrates generally incurs extra capital costs as well as requiring

new management skills. The accrual of extra debt and management complexity against a background of increasing price and climate variability has the potential to negatively impact on farm viability.

Aggregation opportunities – energy efficiency

For dairy to make a meaningful contribution to Australia's emissions reduction, the ERF needs to be designed in a way that will enable the dairy industry to exploit the industry's opportunities for carbon abatement through improved energy efficiencies. As the Green Paper notes on page 13, many opportunities have not been taken up because of competing priorities for capital funding or the down time in production involved in upgrading to more efficient equipment.

Aggregation of many small projects across the industry would reduce participation costs for individual farmers or small companies, and encourage investment in improving their energy efficiency by reducing upfront capital costs. However, aggregation does pose some serious challenges.

For example, we have considered the feasibility of a collective dairy industry tender under the proposed auction process to deliver carbon abatement through improved energy efficiency on-farm. This seems to be the type of industry response that the Government's policy intends to encourage.

However, it is our assessment that transaction costs for an aggregation function involving hundreds or thousands of farms could be prohibitive for the aggregating entity, whether a dairy company or an industry body.

The costs lie in project bid development and administration, determining baselines, carbon savings verification, upfront funding commitments, lag time in remittance from government and action if emissions rise above the industry baseline.

Recognising that agriculture is a significant contributor to Australia's emissions, it is our submission that the ERF should include design elements to enable access to it by energy-intensive agriculture sectors, including the interrelated processing for that sector.

We propose two design measures to achieve this, and facilitate an alternative type of aggregation:

- sector or activity bands
- funding dedicated to a national energy efficiency scheme.

Sector or activity bands should be created within the Emissions Reduction Fund

Activity banding would provide a flexible approach enabling energy-intensive agriculture sectors to participate in the national effort to reduce greenhouse emissions. Banding could facilitate aggregated bids by allowing a range of energy efficient measures with varying costs per tonne of carbon abatement, provided collectively, they delivered an agreed average price per tonne.

Without banding, there is a high probability that all available funding will be soaked up by a handful of very large projects with large abatement at low cost from facilities such as power stations.

Funding should be dedicated to a national energy efficiency scheme within the Emissions Reduction Fund

The ERF could dedicate a proportion of its funding to a national energy efficiency scheme similar to the 'white certificate ' schemes that have operated in Victoria and New South Wales.

The Victorian Energy Efficiency Target (VEET) scheme, for example, creates a financial incentive for householders and Small-Medium Enterprises to install discounted energy efficient equipment. This

generates carbon credits that liable entities such as energy retailers must buy and surrender to the Government. The existing state schemes are considered to be based on robust methodologies.

The national scheme could include a comprehensive register of eligible energy efficient equipment relevant to energy-intensive agricultural industries such as dairying, thereby complementing state schemes that are more focused on households.

It would allow a mix of eligible technologies of varying costs per tonne of carbon abatement to be offered, provided that collectively they fell within an agreed cost band for agricultural energy efficiency measures. The scheme could be a reliable and cost-effective source of abatement based on recognised methodologies to establish baselines and verification.

Such a scheme would also complement the Federal Government's Small-Scale Renewable Energy Scheme, which creates a financial incentive for owners to install discounted small-scale renewable energy systems on houses and SMEs. The installation generates Small-Scale Technology Certificates, which entities liable under the Renewable Energy Target (RET) scheme, such as energy retailers, must buy and surrender to the Government.

A white certificate scheme would also minimise transaction costs for participating industries, because it could be administered through existing frameworks in power companies and regulatory agencies. In this way, the power companies would effectively act as the aggregating entity.

Aggregation opportunities – emissions intensity through a baseline and credit scheme

As with energy efficiency, the dairy industry supports an aggregation approach. Data on farm practices is already collected through various industry mechanisms, creating the potential to integrate reporting against a baseline and credit emissions intensity reduction scheme. However, many of the concerns raised above are also applicable to an emissions intensity-based approach.

To make possible the participation of farm-based emissions intensity dairy projects, suitable arrangements are needed to facilitate the aggregation of individual projects.

Purchasing emissions reductions

Initially the Clean Energy Regulator could run relatively frequent tender rounds to bring forward the delivery of emissions reductions.

The Clean Energy Regulator would apply a benchmark price – the maximum amount it would pay per tonne of emissions reduced – with only bids costing less than the benchmark price being considered.

Views are sought on how best to:

- Facilitate early participation in the Emissions Reduction Fund
- Operate an efficient auction process to secure lowest-cost emissions reductions.

The dairy industry welcomes the initial flexibility of being able to submit at any time through regular tender rounds. However, as mentioned in the section above, the industry is concerned about transaction costs if dairy companies or industry bodies were to prepare an aggregated tender, given the requirements for baselines, verification, reporting and administration, with no guarantee of success.

Banding in conjunction with cost-effective elements such as a white certificate scheme will be essential. Otherwise a small number of large projects could simply knock out other bids on purely cost

grounds in a one-size fits all tender or auction process and limit participation by a broad range of sectors and enterprises sizes.

Transparency will assist participation in the fund. This includes clarity about the timing of tender rounds, advertising the amount being committed to each round in advance, and information from previous funding rounds being made available such as the number of projects funded, the amount of abatement being achieved and the average price paid per tonne of emissions.

Standard contracts will be used to guarantee payments for verified emissions reductions. These would have a maximum duration of five years and include options for addressing under-delivery of emissions reduction.

Views are sought on how best to provide:

- Funding certainty for businesses
- Confidence that projected emissions reduction will be delivered.

In principle, standard contracts are supported. However, more information is needed on critical clauses. For example, the Green Paper is unclear when the Government would pay for the carbon abatement under the contract. It is unclear if the carbon credits would be purchased on installation of energy efficient equipment on the basis of accepted methodologies to determine abatement or would the Government pay for the carbon credits each year of the contract, upon verification that the anticipated energy savings have been achieved, such as through auditing power bills? This is a critical question going to the heart of transaction costs for companies or industries participating in the ERF tenders and auctions.

The dairy industry is also concerned that five-year contracts to purchase carbon credits may be too short with respect to energy efficiency and CFI projects. Many of the latter require incomes streams over a decade or more to be viable, while short contracts could make energy efficiency less attractive for SMEs by reducing funding to offset capital costs and thereby extending the payback periods. Short contracts could also increase the $/t$CO_2$e of carbon abatement, making energy efficiency in SMEs less competitive than large, low-cost abatement projects involving a single facility such as a power station. Such an outcome would result in these projects not receiving funding under a reverse auction scheme that aims to purchase abatement at the lowest cost.

It is important to note that farmer feedback indicates they would support an energy efficiency program in which they pay upfront to install equipment, in the knowledge they will receive the financial offset (in this case, the value of the carbon credit) in a timely manner afterwards. The alternative is a white certificate type scheme, where the value of the carbon credit is already built into the discount on the price of the equipment.

As noted above, it is important that the outcomes of early tender rounds are published, as well as the outcomes of the later auction process once it is set-up. Publication of tender results will help industries and enterprises to gain an understanding of benchmark pricing, and inform their decisions on whether to develop bids. This was an important feature of the water buybacks in the Murray Darling Basin Plan.

Safeguarding emissions reductions

A safeguard mechanism will be introduced to provide incentives to reduce emissions above historical business as usual levels.
Views are sought on:

- The coverage of the mechanism
- How baselines could most easily be set to effectively limit increases in historical business as usual emissions
- The treatment of new entrants and significant expansions including definition of best practice
- Compliance options in the event that baselines are exceeded.

The Green Paper suggests that in relation to companies being required to reduce emissions below historical baselines, the coverage threshold could be changed from facilities emitting more than 25,000 tCO_2e a year, to facilities emitting 100,000 tCO_2e a year. While there is merit in this change, we note that unless the regulations are changed for the National Greenhouse Emissions Register, companies will still be liable for compliance costs to monitor and report emissions from facilities covered by the current 25,000 t/CO_2e threshold.

The Green Paper does not specifically ask for comment on whether baselines should be set on the basis of absolute emissions reduction, or emissions intensity, or both. We note that while the Government previously insisted on an emissions-intensity based scheme, the Green Paper refers to absolute emissions as an option for setting facility baselines.

The setting of baseline methodologies will be critical to determining the abatement from different industries, and in turn this will inform ERF pricing. For the agricultural sector generally, and the dairy industry in particular, it is crucial that emissions intensity baselines are included in the design of the ERF.

While absolute emissions reduction provides a measure of emissions activity at a particular time, an approach to reduce emissions intensity provides a measure of long-term impact relative to production. Emissions intensity through the supply chain, from paddock to processing, is an important aspect for consideration, particularly in the context of policy frameworks intended to encourage rapid growth in agricultural output[19].

We note the question in the Green paper about treatment of new entrants and significant expansions. No definition of “significant expansion” is provided. Defining this in a way to suit all industries would be fraught. As outlined above, we propose use of emissions intensity as a means of incorporating a measure of production growth so enabling expansion without penalty.

From a dairy processing point of view, baselines set on emissions at a point in time can be problematic because emissions from particular plants or across companies depend on the mix of products being manufactured in any given time frame. For example, the volume of milk processed into milk powder has the biggest effect on $C02_e$ emissions. How much milk is processed into powder is generally based on the market price and demand for the product. A shift from fresh dairy products to manufacturing powder will have a big impact on emissions.

With this in mind, the dairy industry would support the flexibility of baselines determined on the basis of emissions over an historical period of time. This would enable the dairy industry to account for

[19] For example, the National Food Plan goal to increase the value of Australia’s agriculture and food-related exports by 45% in real terms by 2025 and, the Victorian Growing Food and Fibre initiative aim to double agricultural production by 2030.

fluctuations in production according to changing market and seasonal conditions, while at the same time working to meet its target to reduce emissions intensity by 30% per unit of production by 2020.

The dairy industry would also support multi-year compliance periods, providing emissions over a defined period do not exceed the baseline.

Building on the Carbon Farming Initiative

The Emissions Reduction Fund will build on and streamline the existing architecture of the Carbon Farming Initiative.
Views are sought on:

- Options for streamlining the Carbon Farming Initiative
- How best to encourage the uptake of land sector activities.

The Australian dairy industry supports the CFI as a market-based program using a carrot rather than a stick to reducing emissions. However, unlocking the potential requires further investment in research and development, particularly for developing methodologies. With a significant reduction in the available funding through the CFI Carbon Farming Futures program, this need for further R&D will remain an impediment to more widespread application of CFI to agriculture.

In dairy, while some current methodologies are not economically viable under current carbon prices, with further R&D it is possible the dairy industry could come up with lower cost abatement opportunities that can be applied under the CFI.

The Green Paper (page 43) highlights soil carbon sequestration as a key abatement activity under the ERF. The dairy industry is concerned that this ignores the findings from industry research and the Government's Soil Carbon Research Program (SCRP), which suggest that opportunities for abatement from soil carbon are limited, particularly for the dairy industry. Soil carbon levels on Australian dairy farms are generally the highest across all industries and can result in high levels of nitrogen loss as nitrous oxide (National Agricultural Nitrous Oxide Research Program) where soils are already effectively carbon-saturated.

There is a significant risk that highlighting soil carbon may result in unrealistic expectations among dairy farmers about the potential to profit from sequestering soil carbon and could potentially drive decreased profit through increased levels of nitrogen loss.

As stated earlier the industry supports awarding credits on an emissions-intensity basis. This would be based around a baseline and credit scheme with payment being made for reducing emissions per unit of production as opposed to a reduction in the total emissions of the project.

The Green Paper notes that under the previous government, companies could buy CFI credits instead of paying the carbon tax. This automatically set the value of CFI carbon credits in the first year at the carbon price of \$23/tCO_2e. However, at this price, the CFI had limited value for the dairy industry, with modelling suggesting that well-managed dairy farms have few cost-effective options to profitably reduce methane and nitrous oxide emissions.

For example, for the approved methodology for methane capture from effluent ponds to be a cost-effective investment option for dairy farmers, the Carbon Credit Units (or equivalent benefit under the ERF) would need to be priced substantially above the \$23/tCO_2e carbon tax price and the expected price of \$8-12/tCO_2e in the 2010 Direct Action Plan.

The Green Paper on page 45 highlights the potential for aggregating dairy feed additives under the CFI, as an example of encouraging uptake of new technologies and participation in agricultural sectors:

> *The CFI's methodology for dairy feed additives was developed in close consultation with industry to support aggregation of emissions reductions across many dairy farms into a single CFI project.*
>
> *This methodology makes use of information that is routinely collected by farmers, such as herd numbers and milk production. Information can be included in a spread sheets tool that makes the methodology easy to use. The tool helps individual farmers and aggregators to gather and summarise the information needed to report on the project. Dairy cooperatives are likely to act as aggregators.*

Based on pilot studies of this methodology, its implementation will unfortunately not be cost-effective as the cost of the additives exceed the benefit that could be gained from carbon credits, even at $23/t. We also note that the interest of organisations acting as aggregators will be influenced by price and that even with a carbon price of $23/t there was debate as to the benefit at a farm and manufacturer level about aggregation. This underlines the need for the ERF to include funding bands to ensure that all sectors can participate, and contribute to meeting Australia's greenhouse gas emissions targets.

Implementing the Emissions Reduction Fund

The emissions reduction fund will be administered by the Clean Energy Regulator.
Views are sought on the proposed governance arrangements.

The Government will conduct a review of the Emissions Reduction Fund towards the end of 2015 so as to provide certainty about the policy and design intent post-2020.
Views are sought on the timing and conduct of a review.

We support the Clean Energy Regulator as the ERF administrator. We support a commitment to review the ERF to provide certainty into the future about its design and contribution to emissions reduction targets. We question if a review in 2015 would be too early to provide a meaningful assessment about the design and effectiveness of the ERF in meeting the 2020 target and beyond. A review undertaken at the halfway point of the ERF operation may be more appropriate.

Other issues: Technical groups

The Government has established an Expert Reference Group to provide high-level advice on the design of the Emissions Reduction Fund. The dairy industry notes the positive inclusion of NFF CEO Matt Linnegar as a representative of agricultural interests on this group.

The dairy industry supports the Green Paper proposal to work within technical groups to consider design methods for the development of simple aggregation models that are cost-effective for small aggregation groups.

However, we are concerned that agriculture is not among the technical working groups recently convened for each of the key industry sectors. So far, the following working groups have been established:

- Coal Fugitive Emissions
- Building Energy Efficiency
- Industrial Energy Efficiency

- Transport
- Waste

We understand that these groups will assist in developing methodologies for estimating emissions reduction, including rules for identifying eligible abatement projects and measuring their results. We understand the aim is to ensure genuine outcomes for a cleaner environment, via cost-effective methods that are simple to put into practice. However, none of the technical groups are examining matters pertinent to agriculture, despite agriculture being among the highest emitting sectors in Australia.

The dairy industry supports the establishment of an agricultural technical working group. This group would consider the methods and rules for reducing energy intensity; energy efficiency opportunities; R&D into additional CFI methodologies; and, appropriate aggregation and other models to enable agriculture to participate fully in the ERF.