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April 2023

# DairyTas submission:

Tasmania's Draft Climate Change Action Plan 2023-25

## Contents



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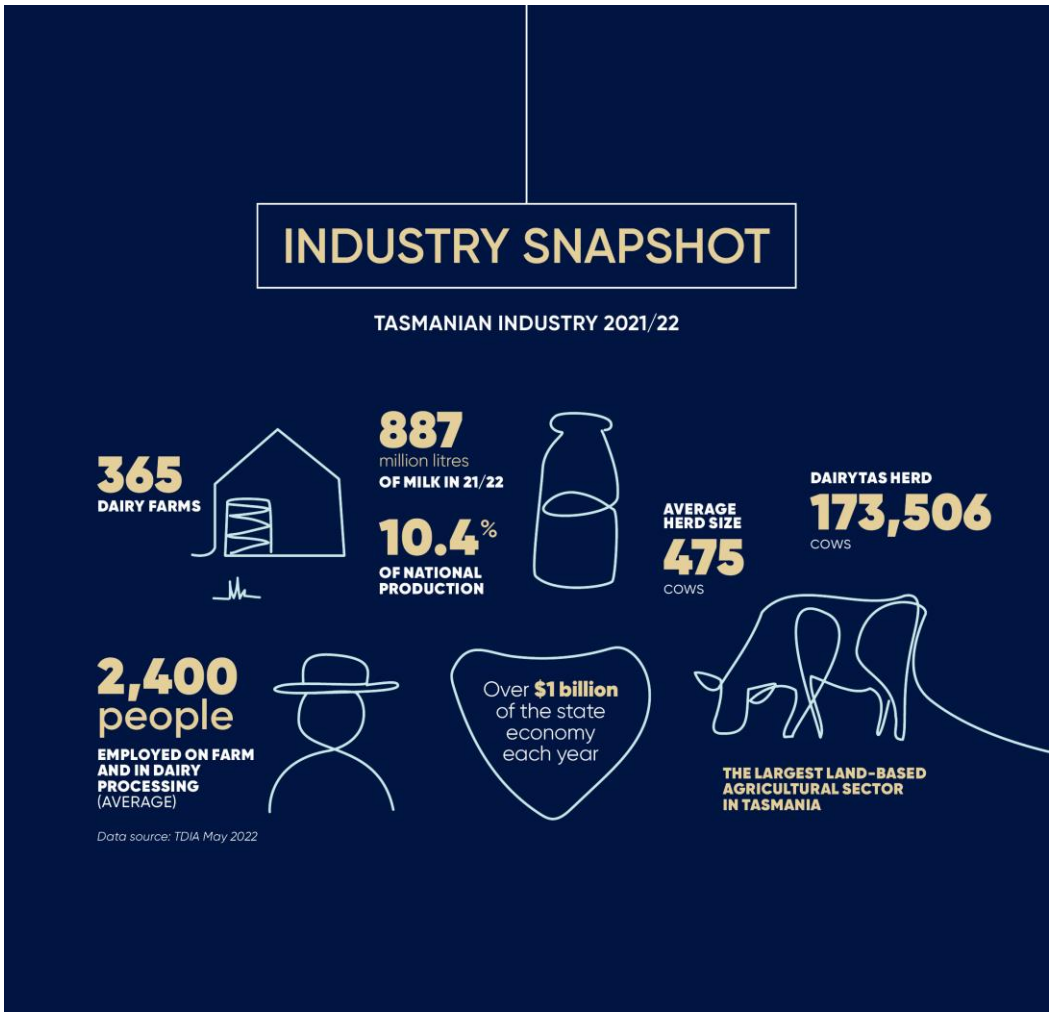


# 1 Key points

- **Greenhouse gas emissions reduction is a key focus** not only of the **Australian dairy industry** but the global dairy sector.

- The national dairy sector has the following emissions reduction target: **30% reduction in emissions intensity by 2030**. While progress towards our target can be measured in absolute terms, emissions intensity is a measure that allows for industry growth—which is envisioned in the Australian Dairy Plan and recognises the critical role of dairy in human nutrition.

- The industry is investing in pathways to achieve our target, including the Australian Dairy Carbon Calculator, animal genetics and animal treatments that result in lower emissions.

- However, there are limits on achievable enteric methane reductions pending scientific and technical research and economic feasibility outcomes for feed supplements or other treatments. Significant uncertainty surrounds these opportunities from both a technical and adoption point of view, and further, significant support is required to bring these technologies to commercialisation, particularly for grazing dairy systems.

- In addition, while GHG measurement at the dairy farm-level (carbon footprinting) is low at the current time (~11%), there are emissions intensity reductions happening in common

and widely applied farm practice (on 94% of Australian dairy farms). **Support is required to help farmers to undertake their Footprinting to better target their activities.**

- While there is progress being made, for real outcomes there needs to be significant investment to commercialise some of the current initiatives.

- **The Tasmanian Government's *Draft Climate Change Action Plan 2023-25 (Draft Plan)* can be a vehicle to support the dairy industry's already established targets through targeted and strategically aligned investments and partnerships.**

- The Draft Plan has identified the expansion of timber plantations as a key action, however land use change from productive farms to timber plantations potentially threatens to undermine and push out farming communities across Australia. This risk is increased by the fact that plantation development is incentivised under a specific Method available under the Emissions Reduction Fund (ERF) which can be used to generate carbon credits (ACCUs). **Any consideration of expanding plantations must be properly weighed up against the community, economic and food security risks of removing productive farm land.**

- **Further engagement with the sector is required** to ensure that Tasmania's programs best target the areas identified through Dairy Australia's extensive research and programming, as well as to ensure that unintended consequences are avoided.

# 2 Introduction

**Dairy Australia** is the national dairy industry-owned service company, limited by guarantee and known as a Research and Development Corporation. It is mainly funded by the Dairy Services Levy, the levy is paid by all dairy farmers and is based on milk production. It also acts as a funding body through which the Australian Government provides funding for rural research and development in Australia. As well, Dairy Australia, and its Regional Development Programmes such as DairyTas, attracts funding at project level from state governments, universities, research organisations and other dairy support organisations.

In this way, we play a critical role in shaping a profitable and sustainable dairy industry.

Dairy Australia operates nationally across eight dairy regions (see **Figure 1: Dairying regions**), where the knowledge, innovation and insights generated by farmer levy investment are delivered back to the farmer. Dairy Australia's *Strategic Plan (2020-2025)* describes the seven priorities and outcomes that will contribute to delivering improved profitability and a more sustainable dairy industry nationally, and in Tasmania.

DairyTas is the Regional Development Program operating in Tasmania. With its own Board, it carefully identifies and develops priorities for ongoing research, development, education and extension relevant in this region. In doing so, it works hard to ensure regional, state and national policies are linked and fully integrated so that research and extension work is prioritised for regional benefit.

The *Tasmanian Dairy Industry Strategic Plan 2022-2027* aims to continue to deliver an adaptive pasture-based industry that contributes over $1 billion to the state economy[1]. The Plan – coordinated by DairyTas and a collaboration of industry, from farm to processing – aims to position our entire industry supply chain, from the farmgate through to dairy export, as environmentally and socially sustainable. This includes a focus to continue to develop industry culture that celebrates best practice management and to support industry members to meet and exceed industry and regulatory protocols.

**Our submission** to **Tasmania's Draft Climate Change Action Plan 2023-25** consultation complements that made by industry representative body, the **Tasmanian Farmers and Grazier's Association (TFGA)**. In recognition of our distinct role in dairy R, D&E, our submission seeks to inform the consultation by **summarising the significant investments and programming for emission reduction that the dairy industry has undertaken to date**.

**We seek support from the Tasmanian Government, through the Action Plan, to enhance roll-out of these investments and programs.**

## Tasmanian dairy industry

Dairy is the fourth largest Australian rural industry and a key sector of the agricultural economy. It's also the largest land-based agricultural sector in Tasmania.

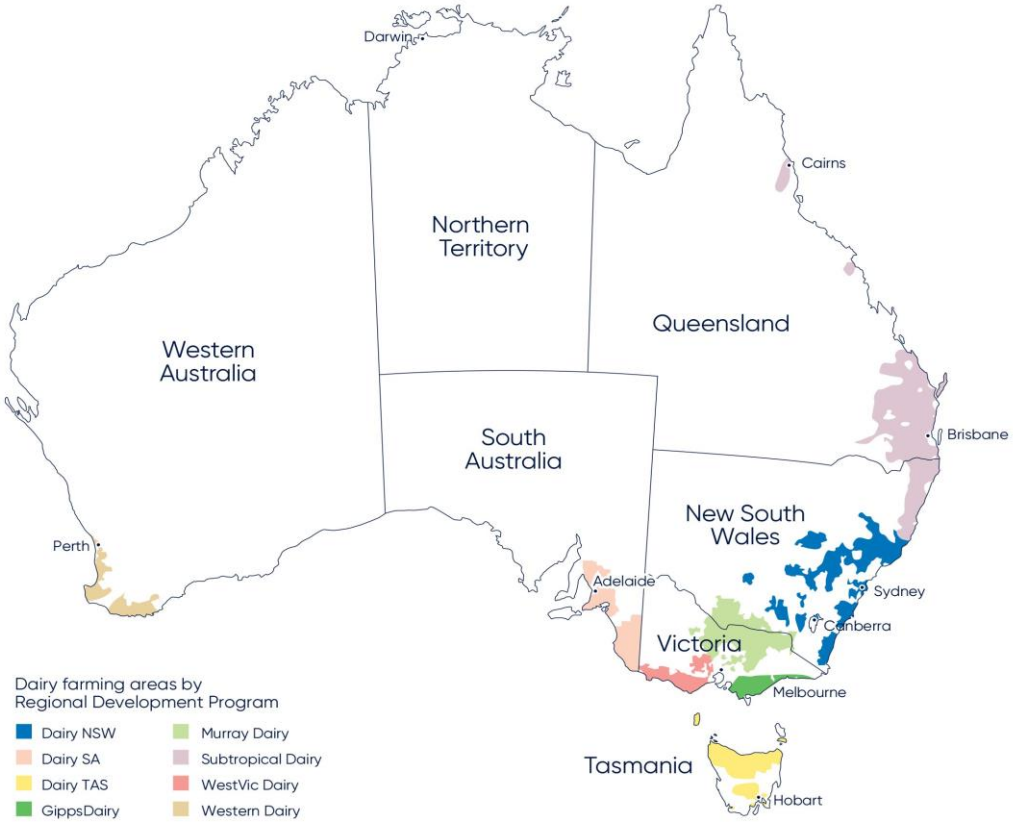


**Figure 1: Dairying regions.**[1]

[1] Ibid.

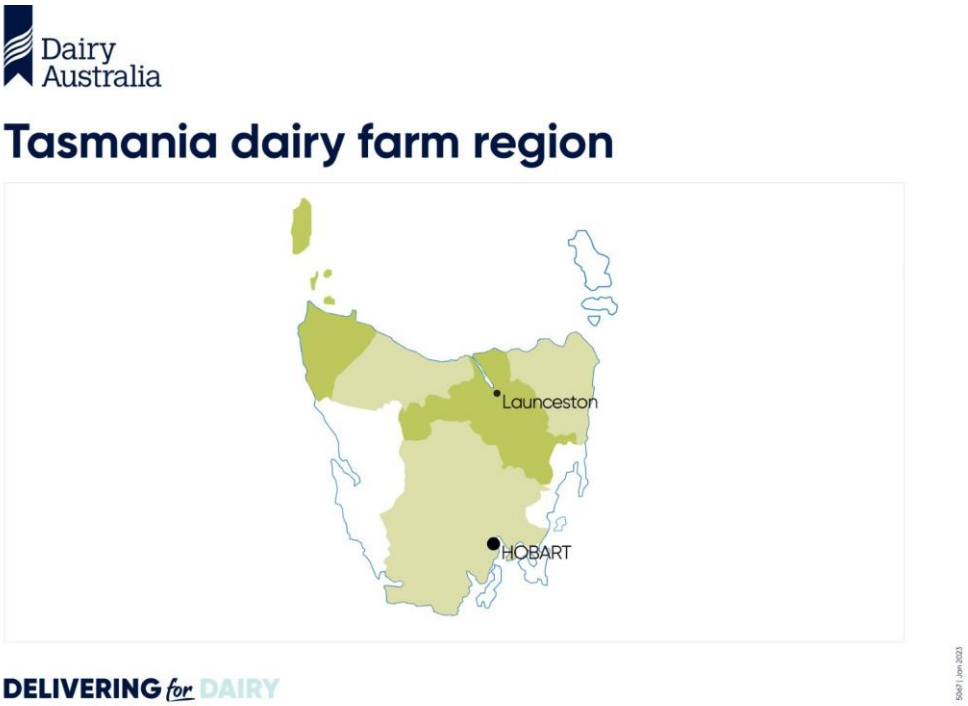


**Figure 2: Locations of dairy farms in Tasmania**

Dairy farms operating in Tasmania made up 10.4% of national milk production in 2021/22.[2] Approximately 887 million litres of milk were produced from 173,000 cows on 365 farms, generating the farmgate value of $490 million in 2020/21. The industry employs over 2400 people on farm and at 16 processing facilities (see Figure 3), contributing over $1 billion to the economy each year.[3]


**Figure 3: Locations of dairy processing locations in Tasmania**

## 3 Australian dairy is investing to reduce greenhouse gas (GHG) emissions

GHG emissions assessment and management is a key focus not only of the Australian dairy industry but the global dairy sector.

The Australian dairy industry contributes ~2 per cent to the nation's GHG emissions and ~12.5 per cent of agricultural GHG emissions.

Dairy Australia is committed to supporting primary producers and milk processors meet their climate obligations into the future. Our current R&D investments are laid out in the Dairy Australia *Climate Change RD&E Strategy 2020-25*.

As this strategy describes, on farm is the predominant source of emissions across the dairy supply chain, with the largest source of emissions coming from methane from livestock enteric (rumen) fermentation (58% of on-farm emissions and also known as biogenic methane), followed by methane and nitrous oxide from urine and dung (18%).

Nitrogen fertilisers cause emissions, via nitrous oxide, (6%) through both their production and application in dairy farm systems (**Figure 3**).

Farms also emit significant amounts of carbon dioxide through the on-farm use of fossil fuels and electricity (8% combined), purchased feeds and concentrates (8%) and purchased fertilisers (3%).

There is a range of pre and post-farm gate activities that generate their own greenhouse gas emissions, which contribute to the dairy industry's total carbon footprint.

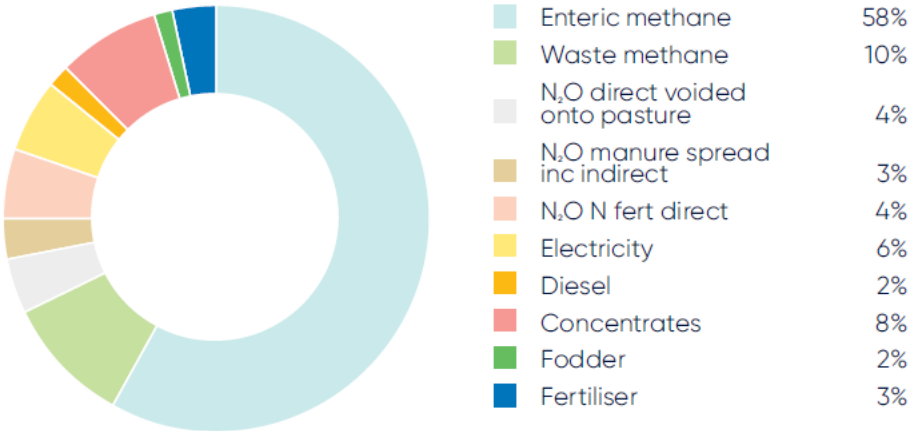


**Figure 3: Analysis of dairy farm greenhouse gas emissions data from DairyBase (Christie 2020).**

The broader agriculture sector, including dairy, faces the dual challenge of increasing food production to meet the nutrition requirements of a growing population while reducing emissions.

Australian dairy farmers' and milk processors' strong public commitment to climate action is described in the Australian Dairy Sustainability Framework.

- Target 10: **Reduce greenhouse gas emissions intensity by 30% across whole industry on 2015 levels**.

Tasmania's dairy industry is conscious of its responsibilities and are looking to take action. Meanwhile, commercial pressures to reduce emissions continue to grow. . This responsibility is a key driver for action.

There are inherent and significant complexities involved in achieving GHG emissions reductions in agriculture, particularly for enteric methane (see **Box 1**), as well as in accurately monitoring, verifying and reporting these emissions in our sector. Scientists are continuing to explore and analyse life-cycle emissions metrics—this is a live scholarly exercise at the global level (see further in this submission).

At the farm level, the loss of GHG emissions represent inefficiencies in dairy systems; this is another key driver for action. The loss of methane and nitrous oxide gases into the atmosphere means that energy and nitrogen that could be directed towards production are being lost. Some level of emissions is expected, but there are many opportunities within a typical dairy system to reduce greenhouse gases and achieve efficiency and profitability gains.

Although the carbon footprint of Australian dairy farming is one of the lowest internationally (1.03 CO2-e/kg Fat & Protein Corrected Milk)[2], the first step towards reducing emissions further is understanding the source of emissions on-farm and then highlighting the most effective options for reducing them.

**Box 1: Facts on methane in livestock production**

- Methane is a product of rumen (stomach) fermentation in cattle and is a result of a physiological process which cannot be negated entirely if the rumen is to function normally providing energy for metabolism from feedstuffs
- Methane from livestock production is often referred to a "biogenic" methane
- While the global warming potential of methane is approximately 28 times that of CO2 (hence 1kg Methane = 28 kgs CO2e in simple GHG calculations) the gas has a far smaller half life of approximately 9-10 years in the atmosphere compared to CO2 which is greater than 100 years
- International consensus on how biogenic methane should be calculated to derive a global warming estimate remains an active debate, but all green house gases (from all sources) will need to be reduced in the next ten years to prevent warming beyond 2°C.
- A typical lactating dairy cow, consuming 20 kg of feed dry matter per day and producing approximately 28 litres (kg) of milk will also produce around 400 g of methane per day
- This 'hard to abate emission' is the subject of global research whose commercial outputs are some way off. Management measures currently available do not allow methane to be controlled to zero at source

**Table 1** summarises **key research investments**[3] that support Tasmanian (and national) dairy farmers to assess/calculate and manage GHG emissions by:

- understanding their **emissions baseline/sources and profile/footprint** (Australian Dairy Carbon Calculator) and
- implementing **economically feasible reduction measures** (such as advances in animal genetics/breeding that reduce the intensity of emissions and using the insights from our

[2] For dairy farms, emissions intensity is measure as CO2-e/kg FPCM (fat and protein corrected milk). FPCM is milk corrected for its fat and protein content to a standard of 4.0 per cent fat and 3.3 per cent protein. This is a standard used for comparing milk with different fat and protein contents. It is a means of evaluating milk production of different dairy animals and breeds on a common basis.

[3] These are farmer-funded investments, from the compulsory levy they pay for RD&E, administered by Dairy Australia.

Marginal Abatement Cost Curve modelling[4] to inform selection of other options to reduce emissions and improve energy efficiency).

Numerous interventions can and do reduce the GHG emissions and intensity of dairy cattle. Many of the efficiency improvements farmers make in their farming systems have modest but cumulative potential to reduce GHG emissions intensity, including for methane.[5] Oftentimes, because these efficiency and productivity improvements are normal business practice and improve profitability, farmers may not be aware of their favourable contribution to emissions reduction—and reductions may not be 'counted' in any GHG accounting framework, though the mitigating impact on global warming is there. The incentive for the practice change is improvement to farm business profitability—in simple terms, for example, the more efficient an animal is at making milk (expressed as kgs milk solids/kgs liveweight per lactation), the lower her emissions intensity footprint.

A Dairy Australia farmer survey has highlighted that **almost all dairy farms (94%) are undertaking activities and farm practices that reduce GHG emissions intensity**, while **only ~11% currently know their emissions or carbon footprint**.[6] The Agriculture Victoria *Dairy Farm Monitor Project* highlights this important insight—that average GHG emissions intensity of the representative study cohort dairy farms decreased across all major emissions sources, on a per kilogram of milk solids basis in 2020-21 (by 2.9% on the year prior).[7] These representative farms are not specifically chasing emissions reductions, but they *are* chasing efficiency and productivity gains in the face of clear challenges to terms of trade and climate volatility.

Notwithstanding the explanation above, to reduce the **enteric (biogenic) methane emissions** of their animals to achieve voluntary emissions reduction targets, it is recognised globally that livestock producers need new and economically viable technologies targeting this problem.

Technical and scientific research programs on feed supplements to reduce enteric methane emissions are in progress, here in Australia and globally.[8] While this research effort is expected to result in commercially available solutions, all require further research and development and are some way off. The current Australian Government research grants program (*Methane Emission Reduction in Livestock* (MERiL) serves to acknowledge this by seeking to fund key research and knowledge gaps, which include the technical feasibility of the feed supplement technologies themselves, emissions factors, and feasibility of administration use in real farming systems.

For dairy companies, GHG emissions intensity is measured by tonnes of carbon dioxide equivalent (tCO2~e) per ML of milk processed. Dairy processing contributes to scope 1 (direct) and scope 2 (indirect) GHG emissions through energy and fuel consumption, particularly from fossil fuels.

- In 2020/21 dairy processing companies consumed on average, an estimated 1.27 terajoules of energy per ML of raw milk processed.
- In 2020/21, Australian dairy manufacturers consumed on average, an estimated 133.1 tCO2-e per ML of raw milk, representing a 25.5% decrease in emissions intensity since 2010/11 (equating to 27% reduction in absolute GHG emissions).[9]

[4] Point Advisory 2019. *Emissions reduction roadmap for the Australian Dairy Industry - Final Report*. Report prepared for Dairy Australia, 26 July 2019, 53pp.
[5] Lean, I. and Moate, P. 2021. Cattle, climate and complexity: food security, quality and sustainability of the Australian cattle industries. *Australian Veterinary Journal*, 99(7):293-308. doi: 10.1111/avj.13072.
[6] Dairy Australia 2020. *Land, Water and Climate Survey Report*. Prepared by Down to Earth Research, May 2020, 77pp.
[7] Source accessed 4 Feb 2022: https://agriculture.vic.gov.au/about/agriculture-in-victoria/dairy-farm-monitor-project
[8] Feed supplements such as 3-NOP and *Asparagopsis* sp. are the ongoing subject of research trials relevant to dairy.
[9] Australian Dairy Industry Council 2022. *Sustainability Report 2021* (forthcoming June 22).

- This data is representative of 84% of Australia's processed milk.

A number of manufacturers and global customers have committed to reduce their emissions and actively participate in global programs such as the Science-Based Targets Initiative, continually strengthening their understanding, measuring and managing sustainability through more targeted goals and transition plans.[10] Many dairy processing companies operating in Australia are also subject to Australia's national legislation that requires public reporting of scope 1 and scope 2 emissions which form the basis of performance reporting for the sector's target.[11]

The Australian dairy industry publishes scorecards[12] each year articulating progress towards targets (including Target 10) in the Sustainability Framework. In this way, dairy is accountable for our actions. This assures markets of our progress as an industry but has the dual benefit also of encouraging further practice change among sector participants.

**Table 1: Key research strategies and investments that support Tasmanian dairy farmers to assess and manage GHG emissions.[13]**

| Initiative or resource | Brief description | Timeline and Link |
|---|---|---|
| Dairy Australia Climate Change RD&E Strategy 2020-25 | This strategy is the inaugural organisation-wide strategy for climate change. It includes long term planning for both adaptation and GHG mitigation. The strategy links to both the DA Strategic Plan and Dairy Sustainability Framework. The strategy guides DA investment in RD&E to address the challenges of climate change in the dairy industry.<br><br>Internal Climate Change Advisory Group (ICCAG) responsible for its delivery. | www.dairyaustralia.com.au/climate |
| Australian Dairy Sustainability Framework (DSF)<br><br>Environmental targets | The DSF is the Australian dairy sector roadmap for a sustainable industry. It is an active and evolving plan, guided by a steering committee with full industry ownership. The DSF has a single climate-related measure of success: 30% emissions intensity reduction by 2030.<br><br>The data collected by the DairyBase Carbon Calculator and the Dairy Australia Land Water Carbon survey (*see below) are used to track progress against this target at the farm level. The Dairy Sustainability Manufacturing Council tracks progress at the milk processing level. | Scorecards here: https://www.dairy.com.au/sustainability/australian-dairy-sustainability-framework<br><br>https://www.dairyaustralia.com.au/manufacturing-resources-and-support/manufacturing-sustainability#.YgBR8epBw2w<br><br>Consumer facing info on emissions here: https://www.dairy.com.au/sustainability/reducing-environmental-impact/reducing-emissions |

[10] Dairy manufacturing examples include: A2: net zero emissions by 2050 ; Bega: reduce absolute scope 1 & 2 GHGE by 40% by 2030 and emission intensity by 50% per litre or per tonne produced (vs 2021 baseline); net zero by 2050 ; Burra: 30% reduction in GHGE by 2030 ; Fonterra: reduce manufacturing/ transport emissions by 30% by 2030 (vs 2018 baseline); net zero by 2050 ; Saputo: by 2025, reduce CO2 intensity of their operations by 20% and reduce energy intensity of their operations by 10% .

[11] Dairy Manufacturers Sustainability Council 2021. *Dairy Manufacturers Sustainability Council Environmental Performance Scorecard 2020-21*, published by Dairy Australia.

[12] Ibid. Also: https://www.dairy.com.au/sustainability/sustainability-framework-reports-and-scorecards

[13] Indicative not exhaustive; further detail can be provided on request

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| 30 Ways Australian dairy is tackling climate change | Although the carbon footprint of Australian dairying is one of the lowest internationally, there is still scope to improve efficiency. Significant progress is being made across dairy farms in Australia, as outlined in this report. | Source here: 30 Ways Australian dairy is tackling climate change \| Dairy Australia - Dairy Australia |
| Marginal abatement cost curve (MACC) assessment of existing and new emission reduction technology | The marginal abatement cost curve assessment is a process which has been previously used by Dairy Aust (2019) to assess the emissions reduction potential and cost of established and emerging technologies in this area.<br><br>Given new technology and treatments are presented for review with reasonable frequency in this domain, the MACC is now being updated to make it easier for new technologies to be incorporated for assessment of applicability, efficacy and cost. | The updated MACC helps guide internal investment and shall be available in 2023. |
| Australian Dairy Carbon Calculator (ADCC) | The Aust. Dairying industry has had a carbon calculator (to estimate the carbon footprint on an individual farm) for multiple years. The version in use currently is v5. Version 6 is in development and shall be released for use as a stand-alone tool, or combined with the Dairy Base farm performance resource, in mid-2022. Dairy Base is the industry standard platform for calculating and benchmarking farm annual physical and financial performance. The ADCC has allowed the Aust. dairy industry to estimate is carbon footprint relative to other dairying countries. The current estimate is 1.03 kg CO2 eq per kg FPC milk.<br><br>Approximately 7% of dairy farms currently calculate their GHG footprint using this the ADCC. We intend to invest to drive uptake to 60% once the ADCC update is released. **Once we are at 60% of industry baselined (2025), we will have a much more robust understanding of where further efficiencies can be made at the farm sector level.** | Available here: Australian Dairy Carbon Calculator 2023 \| Dairy Australia |
| Feed saved Australian Breeding Value (ABV) | Australian dairy uses a genetic evaluation system of breeding values (called Australian Breeding Values (ABVs)) which enable farmers to choose artificial breeding bulls based on over 40 measured traits. This mirrors genetic evaluation systems in other part of the world. The Australian system is overseen by DataGene which is an industry owned organisation. A new Feed Saved breeding value has been recently developed by the joint venture partners in DairyBio (Agriculture Victoria, Dairy Australia and the Gardiner Foundation) and released by DataGene for use by Australian farmers. This breeding value allows farmers to select bulls whose progeny produce the same milk but consume less feed. Because of this, these animals have a lower GHG emissions footprint per unit of milk produced compared to progeny from bulls with a lower Feed Saved ABV. | The ABV became available in Nov 2020 and is updated three times a year with each new ABV release.<br><br>https://datagene.com.au/feed-saved<br><br>https://dairybio.com.au/ |

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| The Environmental Performance Index | Breeding indexes are a way of combining multiple Australian Breeding Values based on their economic importance to produce a ranking for farmers to select bulls to sire their next generation of cows. Based on research undertaken by the joint venture partners in DairyBio, the Environmental Performance Index (working title) is a proposed breeding index focused on reducing greenhouse gas emissions. It will be released by DataGene as a companion resource alongside the existing Balanced Performance and Health Weighted Indexes. The intention of this new index is to allow farmers to select bulls which produce daughters with increased survivability in the herd, increased feed efficiency and decreased GHG footprint overall. It allows a farmer to select bulls which, over time, reduce the GHG footprint of a herd through genetic selection. This improvement is compounding and permanent. | Sustainability Index has been released fact sheet 34 Sustainability index.pdf (datagene.com.au) |
| Land Water and Climate farmer (LWC) survey | Dairy Australia commissions a survey of dairy farmers, every 3 years dedicated to topics concerning land, water and carbon (LWC). Due to the survey design, DA are able to longitudinally track practice change. The survey is robust given the sample size of approximately 500 farmers (approximately 10% of the national dairy farmer population). The survey allows DA to assess topics such as applied technology to reduce energy use on farm and the percentage of farms who have assessed their carbon footprint.<br><br>Prior surveys were conducted in 2006, 2012, 2015 and 2020. Next survey in field 2023. | 2020 Survey results here: DA-LWC-2020-Report-FINAL-external-version.pdf (dairyingfortomorrow.com.au) |
| Saving energy on dairy farms booklet | Published by Dairy Aust in 2018, and available to all dairy farmers at no cost, this resource describes option available to dairy farm businesses to reduce their energy use and hence their carbon footprint. This publication is due to have a second edition published in 2023. | 2018 Edition available now. https://www.dairyaustralia.com.au/resource-repository/2020/07/08/saving-energy-on-dairy-farms-booklet#.Yf73ad9ByUk |
| RD&E projects to enhance cow production efficiency | Dairy Aust have created and run numerous projects and programs since 2003 with an aim to enhance individual cow longevity within a herd in addition to optimising milk production relative to liveweight. Examples of such programs and projects are InCalf (optimising cow reproductive performance, 2006-2019) and Adapting Farm Systems (2019-present). Adoption of resources from these programs on farm ultimately lead to cows that are more productive, within a lactation and have more lactations in their lifetime. Both outcomes reduce the carbon footprint of an individual dairy cow and the herd. | Example sources here: Plant Research \| Improving Pasture Quality \| Dairy Australia Animal Research & Technologies \| Dairy Australia Adapting Dairy Farm Systems \| Dairy Australia C4Milk Project \| Dairy Australia |
| More Profit from Nitrogen project | Nitrogen containing fertilisers (eg Urea and DAP) are commonly used in the dairy industry to grow more kgs of | The More Profit from Nitrogen project was in development |

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| | pasture dry matter per year. However, their application can also result in the release of nitrous oxide, through volatilisation of the fertiliser. Nitrous oxide is a GHG with global warming potential that is significantly higher compared to methane. The More Profit from Nitrogen development and extension project provides farmers with resources required to maximise the efficiency of nitrogenous fertiliser outputs while reducing the risk of inadvertent release of nitrous oxide through suboptimal fertiliser application technique. | between 2016 to 2019 and was a Cwlth funded initiative. Resources from the project are free and available for use.<br><br>http://www.dairyingfortomorrow.com.au/tackling-specific-issues/soils/more-profit-from-nitrogen-dairy/ |
| Envirotracker | "Envirotracker" is an on-line tool and resource to enable a dairy farm to assess their natural capital status (soil, water, biodiversity, energy and GHG) in addition to planning for sustainable and optimal practice management. A simple example from this tool is its use to plan tree use for shade (thereby enhancing cow production efficiency in hot weather) and how tree planting can alter the carbon footprint of a farm. This is a Cwlth funded project through the National Landcare Program: Smart Farms. | Project and pilot complete – publication imminent. Extension in development |
| Climate and Environment Online learning modules for farmers | Dairy Australia is currently developing 7 online learning modules on the following topics: Biodiversity, Water, Fundamentals of environment, Climate Change and dairy, Managing climate risk, Adapting to climate change, Dairy greenhouse gas emissions and Prioritising climate action. These self-paced modules take users through activities, videos, information, and resources in order to improve a farmer's overall knowledge of the environment and climate. The modules will be adapted into face-to-face extension packages delivered by regional extension officers. | Project and pilot complete – publication imminent. Extension in development |
| Lean and Moate review for the Australian Veterinary Journal | This invited scientific review aimed to assess options available to livestock producers to reduce GHG emissions in herds with an emphasis on enteric (biogenic) methane.<br><br>From the paper abstract:<br><br>Interventions to reduce GHG production: Reductions in land clearing and burning of grasslands and increased carbon sequestration in soils and trees have potential to substantially reduce GHG emissions. Increased efficiencies of production through intensified feeding and enteric modification have markedly reduced intensity of GHG emissions for cattle in Australia. Genetic selection for lower emissions has modest, but cumulative potential to reduce GHG (mostly CH4) emissions and intensity. Improved reproductive performance can reduce intensity of GHG emissions, especially in beef production. Feeds and technologies that reduce GHG production and intensity include improved 20 pastures, grain feeding, dietary lipids, nitrates, ionophores, seaweed, 3-NOP, hormonal growth promotants in beef, and improved diets for peri-parturient dairy cattle. There is considerable potential to further reduce emissions from cattle using the technologies reviewed. | Published May, 2021, in the Aust. Vet J.<br><br>https://www.semanticscholar.org/paper/Cattle%2C-climate-and-complexity%3A-food-security%2C-and-Lean-Moate/c5cf6479c9bba0c1f2abc191baf1df8cd28ad44b |

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| Soil carbon report Australia dairy: 2018 update | Current scholarly state of knowledge on the potential for carbon sequestration in dairy pasture soils. The report also discusses the risks and possible opportunities for farmers considering engaging in carbon markets to obtain income from soil carbon credits.<br><br>From the report:<br><br>Well-managed dairy pastures often have relatively high soil carbon levels. If the soil is close to the steady-state carbon content possible for the soil type and climate, the capacity to store more carbon will be small and the potential for the dairy farmer to gain carbon credits is limited. | https://www.dairyaustralia.com.au/resource-repository/2020/07/09/soil-carbon-sequestration-under-pasture--2018#.YgGvW7pBw2w |
| Technical research to reduce emissions underway in the milk processing sector | Collaborative research to improve the environmental performance of dairy manufacturing, e.g. energy efficiency and productivity. | Technical research studies in dairy manufacturing \| Dairy Australia |

# 4 The global dairy industry is committed to working towards net zero

Along with its own national sectoral target described above, the Australian dairy industry has also signed onto the Global Dairy Platform Pathways to Dairy Net Zero pledge. Along with Dairy Australia, Australian dairy milk processing industry peak representative body, the Australian Dairy Products Federation, has signed the Declaration to support pathways to dairy net zero.[14]

Moreover, Dairy Australia is investing farmer levies in life cycle analysis (LCA) research being undertaken by the International Dairy Federation. This work is intended to arrive at a global dairy scientific consensus for calculating the carbon footprint of dairy food, at the farm and processing level, for corporate or product reporting. Key challenging issues to resolve through the research program include: methodology (attributional vs consequential LCA), functional unit (which product), scope of value chain, quality of data, and emissions factors. This global work is currently in progress but will be relevant to the Australian dairy sector when finalised.

# 5 Response to consultation questions

The Tasmanian Government's approach to reducing emissions through the Draft Action Plan is broadly aligned with the dairy industry's own program, as outlined in the sections above. Our program also includes consideration of data collection for better decision making, transition and innovation initiatives, programs to support adaptation and resilience, as well as reporting through the Dairy Industry Sustainability Framework.

**We seek acknowledgement of the planning and investments undertaken to date through this dairy program and ask that the Tasmanian Government considers supporting the measures outlined in Table 1 above under appropriate Action Plan priority areas**.

[14] The global Declaration is a non-binding pledge to support pathways to dairy net zero by: 1) Taking direct action on greenhouse gas mitigation, and/or 2) Supporting and promoting its principles.

Specifically, the following feedback is provided on each of the Priority Areas:

- Information and knowledge:
    - Support the collection of further climate data as it helps farmers to make better decisions about their landscape scale investments.
    - Support the roll out of the Australian Dairy Carbon Calculator which will increase farmers' own knowledge of their emissions profiles and assist them with planning actions based on their own business emissions profile.
- Transition and innovation:
    - Support all the actions proposed for agriculture under Priority Area 2, in particular the further research into feed additives for livestock methane reduction.
    - **Suggest caution regarding pursuing further forestry plantations under LULUCF for carbon sinks where this land use change could impact on valuable farming land and communities**. Loss of productive farmland to plantation could impact social, community, economic and food security outcomes and must be weighed up carefully.
- Adaptation and resilience
    - Support all the actions proposed under Priority Area 3. The dairy industry is also working with farmers to ensure that they are embedding climate change into strategic risk management when undertaking business planning.

# 6 Conclusion

The Australian Dairy Industry has set an ambitious target of reducing emissions intensity from farms by 30% by 2030. Given the emissions profile of dairy farms, this will require investment and support for innovation from industry including Dairy Australia and DairyTas, as well as extensive support from Federal and State Governments.

**While broadly supportive of the activities outlined in the Draft Plan, we seek further engagement regarding specific programs to be funded through this initiative to ensure that they are aligned with and supportive of the programs already outlined in our comprehensive plans for emissions reduction. Further investment in research for methane reduction technologies is particularly required.**

Reducing emissions to keep warming to within Paris Commitment targets is essential for the future of farming enterprises across Australia – however some programs could see unintended adverse consequences on other essential sectors. **We are concerned about the risk to farming communities and food security of replacing productive farm land with forestry plantations** (as carbon sinks). When developing actions under the Plan, consideration must be given to these potential impacts. Continuing to consult with industry groups will ensure these unintended outcomes can be identified, and we look forward to actively participating in these discussions.