



DAIRY MANUFACTURERS SUSTAINABILITY COUNCIL

ENVIRONMENTAL SCORECARD 2019/20

Working together for a sustainable future



Photo: Alexandra Colesworthy

Members of the DMSC 2019/20



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Chobani is committed to continued progressive change that makes a positive impact on Australia’s sustainable packaging ecosystem – and we are proud our work has been recognised by APCO. We have developed a robust system to ensure recyclability is a key factor in the design and development of our packaging. A cross-functional team works closely with our suppliers to maximise recycling or reuse from within our own operations, to the end users – consumers

Andrew Pekin – GM Technical
Chobani Australia

Winners of the 2020 Australian Packaging Covenant Organisation’s Food and Beverage Industry Sector award for their leadership in sustainable packaging

EXECUTIVE SUMMARY

In processing milk and dairy products, the Australian dairy industry has an impact on its environment.

Australian dairy manufacturers continue to work together to reduce their environmental impact through the Dairy Manufacturers Sustainability Council (DMSC).

The DMSC is a nationally recognised community of practice, comprised primarily of environmental and sustainability group managers from Australian dairy manufacturing companies. The DMSC has an industry-wide focus that assists company members to work together pre-competitively to improve environmental performance and the sustainability of their operations.

To support dairy manufacturers in efforts to reduce environmental impact, targets were established in the Framework to reduce water, greenhouse gas (GHG) emissions and waste.

Each year, members of the DMSC report on their performance with regards to these elements. The aggregated data is used to report against the Australian Dairy Industry Sustainability Framework goals and deliver an Environmental Scorecard.

For 2019/20, data was contributed by Bega Cheese, Bulla Dairy Foods, Burra Foods, Chobani Australia, Lion Dairy & Drinks, Fonterra, Lactalis Australia, the Union Dairy Company, and Saputo Dairy Australia. Together these companies represent up to 86% of the milk volume processed nationally.

Contributing manufacturers made good progress in 2019/20 towards each of the Sustainability Framework goals.

HIGHLIGHTS INCLUDE

Water use – a decrease of 5.7% in the consumptive water intensity of dairy companies compared to the previous year

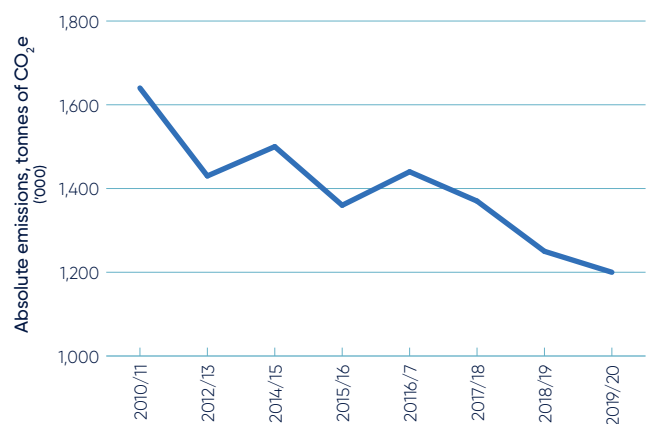
GHG emissions intensity – a decrease of 3.3% in GHG emissions intensity over the year, representing a 23.5% decrease since 2010/11 and a 10% decrease since 2015

Absolute GHG emissions – a 27% reduction in absolute GHG emissions since 2010/11

Waste to landfill – dairy companies diverted 93% of waste generated from landfill, compared to 76% in the previous year

Each manufacturer can use the scorecard to benchmark their performance against their peers, share learnings, and identify areas of opportunity for further improvement.

Figure 1 Australian dairy manufacturing GHG emissions



Australian dairy manufacturing has reduced absolute GHG emissions by 27% since 2010/11 (representing approximately 86% coverage of all milk processed).

SCORECARD GOAL 9

INCREASE WATER USE EFFICIENCY

Target 9.1 30% reduction in the consumptive water intensity of dairy companies (on 2010/11 levels) by 2030

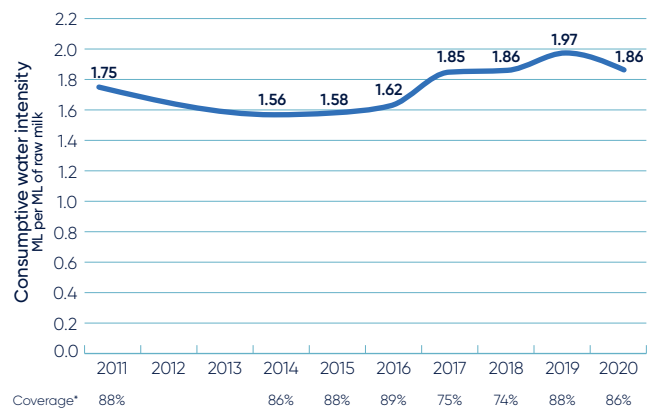
Most of the water used in the dairy industry is on farms. In the processing and manufacturing of dairy products, cleaning is the single largest water-consuming process. This is mainly driven by the need for food safety. However, a range of other factors can influence water consumption at processing sites including:

- **Product mix** In factories which produce milk powder, water can be recovered and re-used while other products may need water when reconstituting dry ingredients.
- **Milk supply** Declining milk supply in some regions, often impacted by drought, requires factories to operate at a lower capacity and this can impact resource efficiency.
- **Water supply** A drought presents additional challenges as water quality can deteriorate as supply diminishes, requiring additional treatment or dilution.
- **Customers** An expanding range and diversity of dairy products for consumers requires more frequent changeovers and associated washing of plant and equipment.

Results

This year water intensity decreased slightly from 1.97 ML per megalitre (ML) of milk processed to 1.86 ML per ML of milk processed. While this represents a decrease of 5.7% over the year, the overall trend since 2010/11 is an increase of 6.5%. Related to water consumption, wastewater intensity also decreased by 7% over the past year. The decrease in both water intensity and wastewater intensity demonstrates an improvement in efficiency despite a slight drop in the volume of milk processed this year. This figure represents 86% of the milk volume processed nationally. Water intensity has fluctuated since 2010/11 with an initial drop in intensity to 1.56 ML per ML of milk processed in 2012/13 followed by a steady increase until 2018/19.

Figure 2 Consumptive water



In 2019/20 DMSC members consumed on average, an estimated 1.86ML of water per ML of raw milk.

Figure 3 Wastewater



In 2019/20 DMSC members generated on average, an estimated 1.78ML of wastewater per ML of raw milk.

SCORECARD GOAL 10

REDUCE GREENHOUSE GAS EMISSIONS INTENSITY

Target 10.1 30% reduction in greenhouse gas (GHG) emissions intensity across the whole industry (from a baseline of 2015) by 2030

For dairy companies, this 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 2019/20 DMSC members consumed on average, an estimated 1.24 terajoules of energy per ML of raw milk processed.

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**. Many members of the DMSC 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 this target.

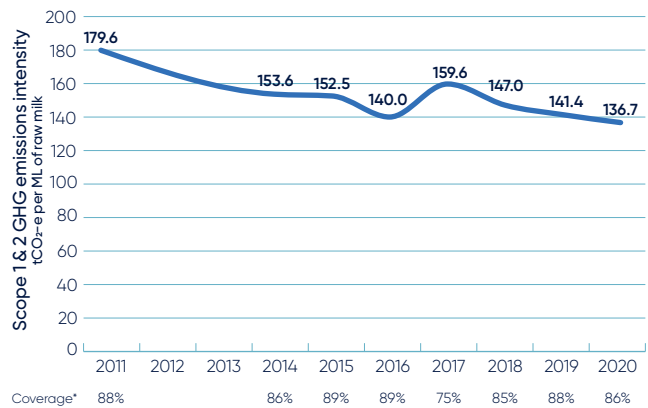
Results

GHG emissions intensity decreased from 141.4 tCO₂-e per ML of milk processed to 136.7 tCO₂-e per ML of milk processed. This represents a decrease of 3.3% over the year, a 23.5% decrease since the original baseline of 2010/11 and a 10% decrease on the revised baseline of 2015. There has also been a substantial decrease in absolute emissions. Since 2010/11 these have decreased by 27%.

During the year, energy intensity decreased by 13%. In the previous reporting cycle this trend in greenhouse gas emissions and energy intensity was attributed to a move away from natural gas to renewable energy due to increasing cost, and this has been maintained this year.

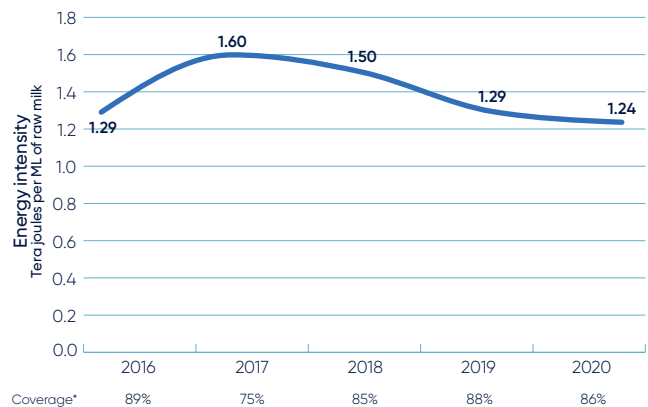
Both figures are representative of 86% of the milk volume processed nationally.

Figure 4 Greenhouse gas emissions



In 2019/20 DMSC members consumed on average, an estimated 136.7 tCO₂-e per ML of raw milk.

Figure 5 Energy



In 2019/20 DMSC members consumed on average, an estimated 1.24 terajoules of energy per ML of raw milk.

Retrospective change to energy intensity: In this reporting year (2019/20), it was noted that the manufacturers reporting of 'energy consumed' and 'renewable energy consumed' were different to how they were treated in the calculation of energy intensity. Moreover, total energy consumed was previously assumed to be the sum of reported 'energy consumed' and 'renewable energy consumed', however it was found that manufacturers had been treating renewables as a subset of their reported energy consumed. This has been amended in all prior year calculations of energy intensity (resulting in minor corrections).

SCORECARD GOAL 11

REDUCE WASTE

Target 11.1 100% diversion rate from landfill (for dairy companies) by 2030

Dairy manufacturers typically generate a variety of waste types including: packaging waste such as cardboard, paper, cartons and plastic; organic wastes such as sludge and rejected product; waste from disposable personal protection equipment such as hair/beard nets; and office waste.

Waste streams can vary significantly across sites and a small number of sites with specific waste challenges can impact on the sector-wide data. Some sites report 100% waste diversion already. Regional locations of many manufacturing sites also present challenges in accessing recycling services.

The industry has embraced the 2025 National Packaging Targets committing to 100% of Australian dairy packaging to be recyclable, compostable or reusable by 2025 or earlier. An industry working group has been established to drive industry-wide progress towards meeting those targets and to support the development of circular economies for dairy product packaging.

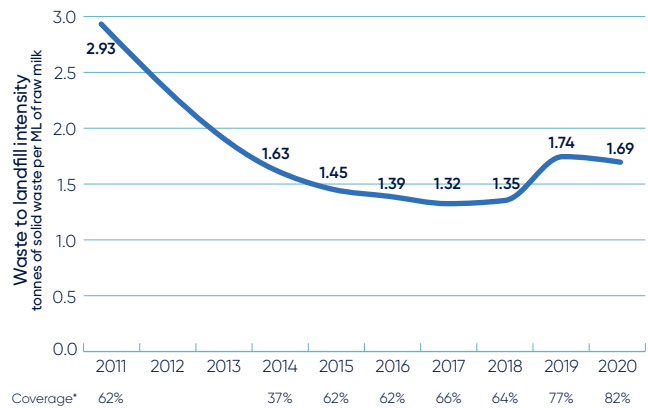
The disposal of waste to landfill is both costly and a waste of resources, including raw materials. Some of the improved performance in waste diversion and reduction this year may be attributed to planned and actual increases to landfill levy charges across key states. Most states have initiated significant changes to these charges in recent years.

Results

The diversion of waste from landfill increased by 17% from 76% in 2018/19 to 93% in 2019/20. This is also supported by data from DMSC members showing an overall decrease in tonnes of waste to landfill per ML of milk processed of nearly 3%. This figure represents 82% of the milk volume processed nationally.

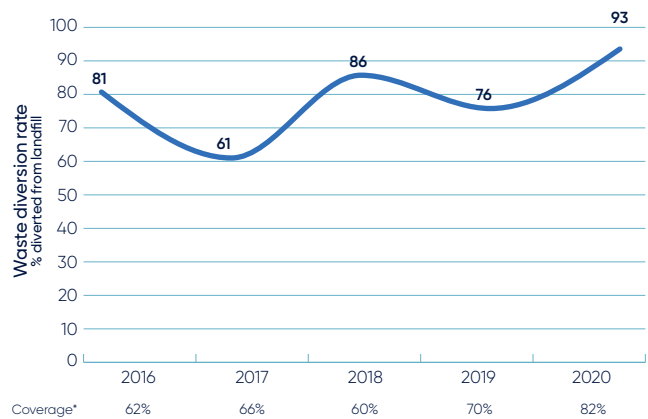
In 2019/20 DMSC members generated on average an estimated 1.69 tonnes of solid waste per ML of raw milk.

Figure 6 Waste to landfill



In 2019/20 DMSC members generated on average, an estimated 1.69 tonnes of solid waste per ML of raw milk.

Figure 7 Waste diversion



In 2019/20 DMSC members diverted on average, an estimated 93.4% of waste from landfill.

PROGRESSING OUR GOALS

DMSC members participated in a number of specific initiatives to support progress towards achieving our sustainability goals for Commitment 4 of the Sustainability Framework: Reducing environmental impact.

Priorities for more sustainable manufacturing

During the year, the DMSC undertook an innovation needs assessment and technology screening exercise to identify technologies best suited to meeting the needs of manufacturers. The project identified three key areas of sustainability innovation for dairy companies: reducing water intensity at factory; reducing food waste at production; and energy cost reduction. A global scan and mapping of potential technologies and solutions is now underway.

Roadmap to sustainable packaging

Dairy Australia has secured support from the **Australian Packaging Covenant Organisation (APCO)** to develop a Dairy Packaging Roadmap to 2025. The dairy industry's Sustainable Packaging Working Group, comprised of packaging professionals from DMSC member organisations, will collaborate to draft the Roadmap. It will highlight the industry's packaging opportunities, challenges and positive case studies with respect to meeting the 2025 targets (100% of Australian dairy packaging to be recyclable, compostable or reusable).



Back row, L-R Peter Coates (Bega Cheese), Adriaan van Dijk (Bega Cheese), Ian Olmstead (Dairy Australia), Kelvin Davies (Nextek). Front row Paul Frigo (Genos), Lauren Mann (Genos), Andrew Baroutas (Bega Cheese), Shalini Singh (Bega Cheese)

Increasing recycled content in milk bottles

A project is underway by Bega Cheese to increase the recycled plastic content of milk bottles, working with technical experts Qenos and Nextek, and supported by co-funding from Food Innovation Australia Limited. Results of the study are anticipated to set a new benchmark for the ability to introduce food-grade recycled plastics into milk bottles.

Delivering better recycling outcomes

Saputo Dairy Australia, Bega Cheese and Lactalis Australia are supporting a project with University of Technology Sydney and PEGRAS Technologies to develop a process which will improve label adhesive removal from dairy products. If successful, this will facilitate much more efficient recycling of these materials and result in production of higher-grade recycled material.

Turning dairy food waste into profit

There are significant opportunities to create new business models for improved management of wastes, unlocking new revenue streams for Australia's livestock industries, including dairy. The Wastes to Profits Project is developing technologies and business models for the conversion of wastes from livestock and municipal waste industries into valuable products resulting in productivity and profitability improvements.

For the dairy sector, the project has recently been working with Dairy Australia and dairy processors from around Australia to better characterise whey streams with a view to identifying enhanced treatment options and value-added product opportunities. These opportunities can reduce costs and increase revenues for participants across the dairy value chain. The Wastes to Profits project is supported by Meat & Livestock Australia through funding from the Australian Government Department of Agriculture, Water and the Environment, as part of its Rural R&D for Profit program, and program partners including Dairy Australia.



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