



dairy
manufacturers
sustainability
council

Environmental Sustainability Scorecard 2014/15



Australian dairy manufacturers working together
for a sustainable future

A report from the Dairy Manufacturers Sustainability Council



Our results



Minimising our environmental footprint

Reporting by the Dairy Manufacturers Sustainability Council (DMSC) contributes to tracking industry progress against the Australian Dairy Industry Sustainability Framework under 'Reducing our environmental impact' — targets 9, 10 and 11.

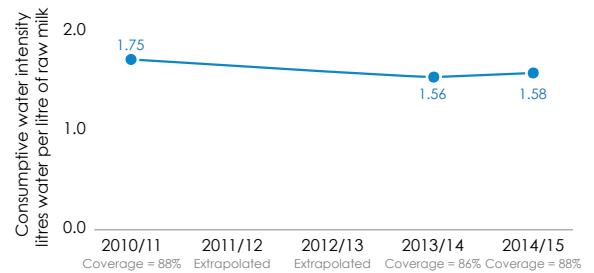
Target 9

Reduce the consumptive water intensity of dairy manufacturers by 20%

Performance indicator

9.1 Consumptive water intensity of dairy manufacturers (litres per litre of milk processed)

Baseline (2010/11)	2015 (result)	2015 (% change from previous year)	Progress (since 2010/11)
1.75	1.58	1.3% increase	10% decrease



In 2014/15 DMSC members consumed an estimated 1.58 litres of water per litre of milk processed. This represents 88% of the milk volume processed in Australia.

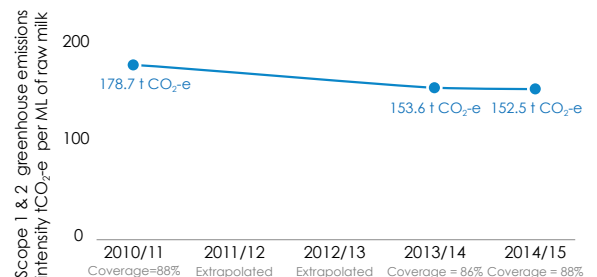
Target 10

Reduce greenhouse gas emissions intensity by 30%

Performance indicator

10.1 Emissions from dairy manufacturers (tonnes of CO₂ equivalent per ML milk processed)

Baseline (2010/11)	2015 (result)	2015 (% change from previous year)	Progress (since 2010/11)
178.7	152.5	0.7% decrease	14.7% decrease



In 2014/15 DMSC members generated an estimated 152.5 tonnes of CO₂-e per ML of milk processed. This represents 88% of the milk volume processed in Australia.

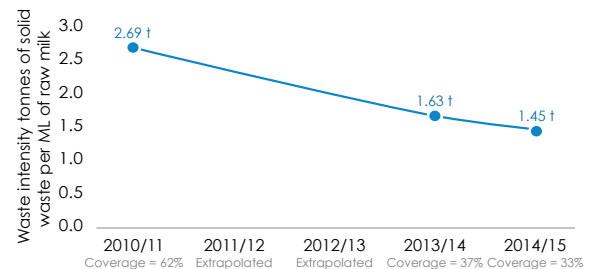
Target 11

Reduce waste to landfill by 40%

Performance indicator

11.1a Waste to landfill intensity of dairy manufacturers (tonnes of waste per ML milk processed)

Baseline (2010/11)	2015 (result)	2015 (% change from previous year)	Progress (since 2010/11)
2.69	1.45	12% decrease	46% decrease



In 2014/15 DMSC members generated an estimated 1.45 tonnes of waste per ML of milk processed. This represents 33% of the milk volume processed in Australia.

improvement from baseline

Executive summary



This is the fifth time the Australian dairy manufacturing industry has reported on its environmental performance. Covering the financial year 2014/15, this scorecard compares the industry's performance against available environmental data previously published for 2010/11 and 2013/14. The DMSC also published reports in 2004/05 and 2007/08.

The scorecard draws on information gathered for reporting against the Australian Dairy Industry Sustainability Framework and serves as a progress report against its environmental targets (see Figure 1 below).

The data is based on aggregated information provided by participating members of the Dairy Manufacturers Sustainability Council (DMSC). Some performance measures have been changed to reflect changes to methodologies and to align with the Framework which was adopted in 2012.

A more detailed report on the industry's progress against the entire Framework can be found at www.sustainableairyoz.com.au

This year, water consumption performance has remained relatively stable with a slight increase of 1.3% in

the intensity of water consumption. Importantly, the overall trend is a 10% reduction since 2010/11, moving toward a target of a 20% reduction by 2020.

Similarly, greenhouse gas emissions intensity decreased slightly by 0.7% from the previous year with an overall trend of a 14.7% reduction since 2010/11, toward a target of a 30% reduction by 2020.

Australian dairy manufacturers produced an estimated 1.45 tonnes of waste to landfill per million litres or megalitre (ML) of milk processed in 2014/15, achieving a 46% reduction since 2010/11.

It's encouraging to note that data collection and reporting methodologies are continuously improving. On an absolute basis, the resource efficiency data for 2014/15 can be regarded as the most accurate collected by the Australian dairy manufacturing industry to date.

However, more work needs to be done to improve measurement and monitoring of waste data and manufacturers' participation rates before these results truly reflect reductions in waste generation.



In addition, reporting will be improved with work planned for the coming year on other waste streams such as wastewater and recycling rates.

It is important to note that changes in resource consumption in the sector are also highly influenced by the product mix. Factories producing fresh milk use energy and water and generate waste differently to factories which focus on the production of cheese, yoghurt or milk powder. Changes to the overall national product mix will therefore influence waste generation trends.



Figure 1 Scorecard focus: dairy manufacturers' contribution to reducing environmental impact

Methodology

The information disclosed in this report was largely drawn from data gathered as part of a DMSC members' engagement program.

DMSC members were asked to collect information about milk volume processed, water consumption, greenhouse gas emissions, waste generation and wastewater generation for the 2014/15 financial year. A total of eight manufacturing companies contributed environmental performance data.

Not all participating companies had data for all parameters and therefore the percentage of the national milk volume represented is noted for each individual indicator. None of the data presented in the scorecard has been independently assured or audited although some of the raw data may have been audited by the participating companies for other purposes (eg. compliance under the *National Greenhouse & Energy Reporting Act 2007*).



Figure 2 Dairy Manufacturers Sustainability Council members participating in report



Progress against targets

Target 9



Reduce the consumptive water intensity of dairy manufacturers by 20%

SUMMARY

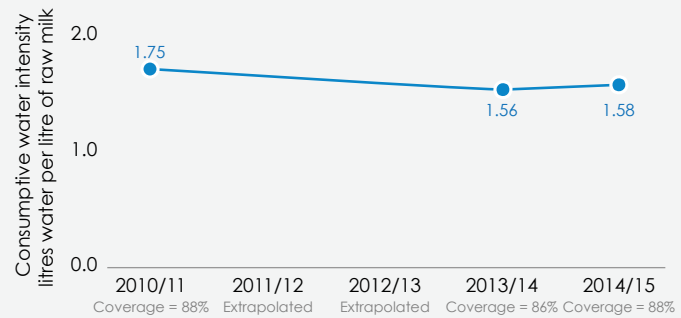
The dairy industry relies heavily on the availability of water for both farming and manufacturing. Dairy manufacturers continually look at options to reduce their water consumption. For many, this is a direct response to reduced access to primary water supplies, and for others it is an attempt to ensure water supplies are maintained for as long as possible.

In the dairy industry, consumptive water is defined as 'water in'. This includes freshwater (municipal water, groundwater, rivers/dams/streams, harvested rain water), treated wastewater and recycled water (which may include water treated on-site for reuse).

Product safety requirements mean that cleaning is the single largest water-consuming process used in dairy manufacturing plants. Water is also necessary for other service processes such as cooling towers and boilers.

RESULTS

CONSUMPTIVE WATER



In 2014/15 DMSC members consumed an estimated 1.58 litres of water per litre of milk processed. This represents 88% of the milk volume processed in Australia.

In 2014/15, DMSC members reported consumption of an estimated 1.58 litres (L) of water for every litre of milk processed. This represents a slight increase of 1.3% in the intensity of water consumption from the previous year.

However, the trend to reduce consumption continues, with a 10% reduction since 2010/11 toward the overall target of a 20% reduction by 2020.

While the performance of the dairy manufacturing sector remained relatively flat since last year, the coverage of this indicator by the industry is improving.

Data for water intensity reflects an estimated 88% of milk volume across the whole industry which is an increase on the coverage of 86% in the previous reporting cycle.

Performance indicator

9.1 Consumptive water intensity of dairy manufacturers (litres per litre of milk processed)

Baseline (2010/11)	2015 (result)	2015 (% change from previous year)	Progress (since 2010/11)
1.75	1.58	1.3% increase	10% decrease

BURRA FOODS REDUCES WATER USE

Water from evaporating milk to produce powdered milk is collected, treated and re-used, decreasing the amount of town water Burra Foods consumes.

More than 60 million litres of water were recovered and reused at the Gippsland site last year — enough to provide almost three months of water for the entire population of Korumburra where Burra is based.

In 2014/15, the company used 20% less town water per million tonnes of production and this trend is expected to continue to 25% by June 2016.

An additional project has also begun to look at expanding the recovery system with the potential to recover an additional 140 million litres of water per year. This is equivalent to 6.5 months of water use by the Korumburra community.



Burra Foods has reduced the amount of water it uses, reducing the impact on its local community, Korumburra.

Progress against targets continued...

Target
10



Reduce greenhouse gas emissions intensity by 30%

SUMMARY

The Australian dairy industry recognises it has an important role to play in saving energy and reducing greenhouse gas emissions (GHG). The agriculture, forestry and fishing sector accounted for about 18.3% of Australia's GHG emissions in 2013¹, with the dairy industry accounting for 10% of these emissions, or 2% of total national emissions².

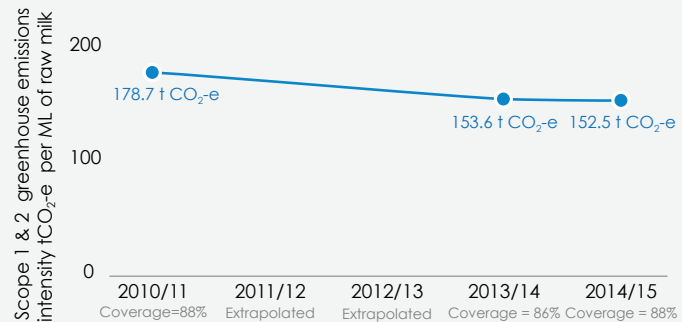
Dairy manufacturing in Australia is responsible for around 5% of the emissions from the dairy industry overall³. The outcomes of the Paris Climate Change Conference (COP21) and the subsequent targets agreed by the Australian government will inform the evolution of the industry's response.

The amount of energy used in a dairy manufacturing plant depends on the product produced. The production of milk powder, for example, requires more energy (to evaporate water) compared with liquid milk production.

¹ Quarterly Update of Australia's National Greenhouse Gas Inventory: June 2015. Available at: www.environment.gov.au/system/files/resources/48f221e4-6613-4eb2-b279-18ad7061484a/files/economic-sector-2013.pdf
² & ³ Miyake, S., Gaffel, J., Pagen, B. UNEP Working Group for Cleaner Production in Food (2008) Greenhouse Gas Inventory for the Australia Dairy Industry 2006/2007 — Final Report, UniQuest Pty Ltd.

RESULTS

GREENHOUSE GAS EMISSIONS



In 2014/15 DMSC members generated an estimated 152.5 tonnes of CO₂-e per ML of milk processed. This represents 88% of the milk volume processed in Australia.

The graph above shows GHG emission intensity generated by dairy manufacturers in 2014/15 equated to an estimated 152.49 tonnes of carbon dioxide equivalent (CO₂-e) per million litres or megalitres (ML) of milk processed. Emissions cover combusted stationary fuels (Scope 1), transport fuels (Scope 1) and emissions associated with grid electricity (Scope 2).

This represents a 0.7% decrease in GHG intensity from 2013/14 and a 14.7% reduction since 2010/11. Our aim is to reduce GHG emissions intensity from dairy manufacturing by 30% by 2020. Similar to data collection related to water consumption intensity, the coverage of dairy companies providing information for GHG emissions intensity is also improving — now capturing information from 88% of the milk volume compared with 86% in 2013/14.

Performance indicator

10.1 Emissions from dairy manufacturers (tonnes of CO₂ equivalent per ML milk processed)

Baseline (2010/11)	2015 (result)	2015 (% change from previous year)	Progress (since 2010/11)
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NEW INVESTMENTS HELP PARMALAT CUT CARBON EMISSIONS

Award-winning work by Parmalat at its Lidcombe manufacturing facility in Sydney saw 19 electricity meters installed to measure consumption by refrigeration and air compressors; packaging moulding machines; and other large equipment on the processing floor.

The manufacturer also installed five steam, natural gas and compressed air flow meters.

This equipment enables Parmalat to follow energy consumption and efficiency ratios of the main energy users on site being the boiler house, refrigeration system and compressed air.

This project won a National Energy Efficiency award from the Energy Efficiency Council last year, and has enabled Parmalat to measure the reduction in carbon emissions from different projects.



Parmalat won a National Energy Efficiency Award for its work in reducing energy consumption at its Lidcombe manufacturing facility in Sydney.



Target 11



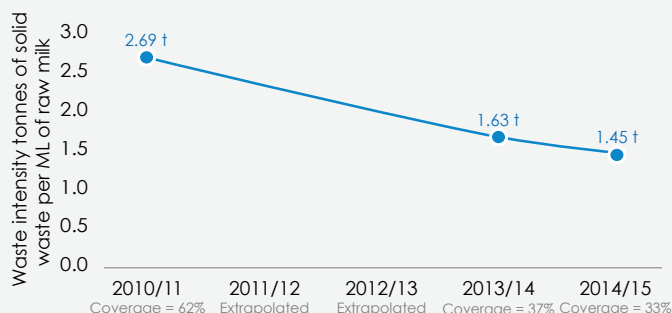
Reduce waste to landfill by 40%

SUMMARY

Dairy manufacturers generate solid and liquid waste, ranging from cardboard and plastic packaging to wooden pallets and wastewater treatment sludges. Sending waste to landfill attracts a cost to the company, with landfill and waste levy systems across most Australian states generating funds that support government, industry and community efforts to reduce waste.

RESULTS

WASTE TO LANDFILL



In 2014/15 DMSC members generated an estimated 1.45 tonnes of waste per ML of milk processed. This represents 33% of the milk volume processed in Australia.

Australian dairy manufacturers have achieved a 46% reduction in landfill waste in the past three years. In 2014/15, they produced an estimated 1.45 tonnes of waste to landfill per million litres or megalitre (ML) of milk processed. This equates to a 46% reduction since 2010/11 and exceeds the target of a 40% reduction by 2020.

However, the coverage of manufacturers' reporting on waste to landfill has dropped to 33% of

national milk supply from a previous high of 51% in 2013/14. As a result, it is difficult to draw meaningful conclusions until the coverage improves to represent the majority of milk processing.

At the same time, more companies require contractors to weigh waste more accurately, which will help to improve data in future cycles.

Manufacturers also collect data across a broader range of waste streams (e.g. recyclables) which will be included in future reporting.

This year, for example, data has been collected on wastewater generation per megalitre (ML) of milk processed over the past four years. The data collected this year represents 36% of the milk volume processed in Australia. This information will be considered for future reporting.

Performance indicator

11.1a Waste to landfill intensity of dairy manufacturers (tonnes of waste per ML milk processed)

Baseline (2010/11)	2015 (result)	2015 (% change from previous year)	Progress (since 2010/11)
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PLASTIC RECYCLING GOOD FOR ENVIRONMENT AND THE BOTTOM LINE

Bega Cheese is partnering with small Melbourne recycling company Polymer Holdings to recycle plastic waste produced by its manufacturing facility at Strathmerton, Victoria.

The range of plastic waste generated at the site has been a challenge for several years and the new project means no plastic waste produced at the site will go to landfill.

Polymer Holdings sources and recycles many types of plastics from manufacturers, separating, cleaning and chipping the wastes to make a base material. This is then sold to make plastic pallets, film sheets, stadium seats, plastic-wood decking and outdoor furniture. All reclaimed product is used locally.



Bega supplier Jason Bake has found avenues for on-farm waste, reducing the amount that goes to landfill. Photo: Australian Dairyfarmer.



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