Department of
Primary Industries and
Regional Development

GOVERNMENT OF
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Dairy and greenhouse gas emissions

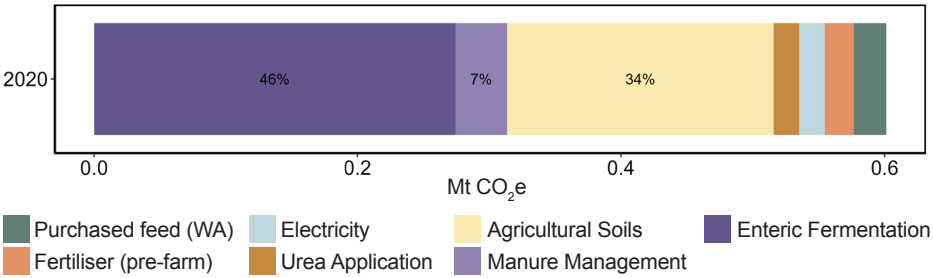
Western Australian dairy industry had an estimated gross value of about $187 million in 2021-2022 at the farm gate.

It is the second-smallest agricultural industry by value, but the fourth-largest contributor to WA agriculture's total emissions.

2020 dairy industry snapshot

The dairy industry is dominated by grass-fed systems with most operations found in the higher rainfall, south west area of the state.

Dairy industry emissions were approximately 0.60 Mt CO_2e in 2020, with approximately 50% from methane (mostly enteric fermentation) and 34% from agricultural soils (nitrous oxide mostly from fertilisers).



Estimated emissions from the WA dairy industry by source in 2020.

Mitigation challenges

The technical potential of feed additives is moderate, and costs remain high, resulting in relatively high abatement costs.

There is also limited scope for family-owned dairy businesses to install covered ponds to capture effluent emissions.

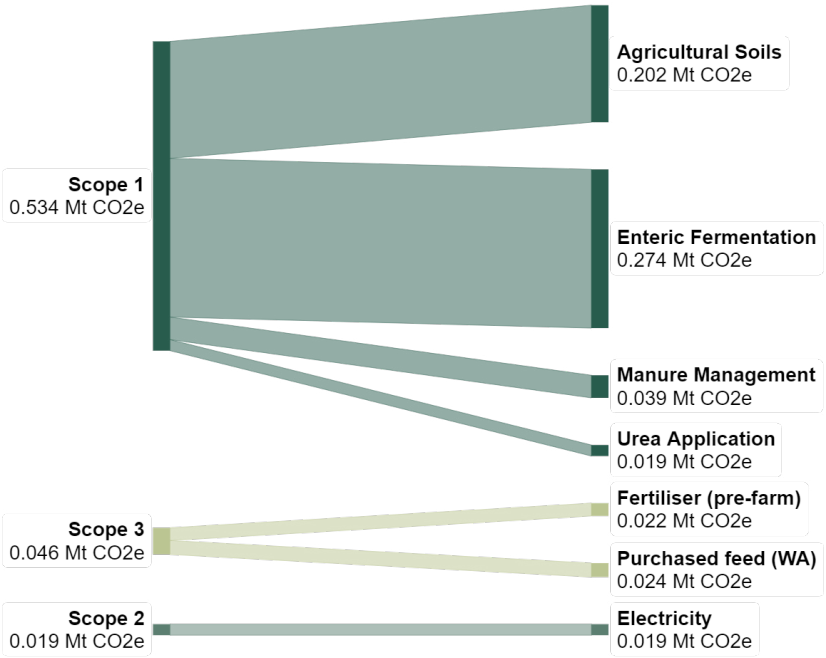
Dairy industry emission sources

Emissions are classified as Scope 1,2 and 3. This separation aids in identifying the source of emissions.

Scope 1: All emissions on-farm from dairy production.

Scope 2: Emissions from electricity.

Scope 3: Emissions associated with producing inputs, both pre-farm and post-farm.



2020 estimated emissions from the dairy industry
*Only pre-farm scope 3 emissions are included here.

DPIRD dairy emission research priorities

- Measuring emissions on dairy farms.
- Identifying farm-level transitions needed to reduce agricultural greenhouse gas emissions and adapt to a changing climate.
- Assessing the potential of forages to reduce methane emissions.
- Validating demonstrations of the efficacy of feed additives and inhibitors in reducing on farm emissions.
- Genetic screening for low-emissions dairy cows and bulls.
- Running whole-of-farm trials to lower emissions and increase production.
- Modelling practice change scenarios to understand the system wide impacts of potential mitigations.
- Benchmarking dairy emissions intensity in a global context.

Ways to reduce emissions in the dairy industry

- Breed and manage livestock for more efficient growth and early turnoff
- Improve grazing management practices
- Incorporate forages that reduce methane emissions in livestock grazing systems
- Adopt anti-methanogenic feed additives and inhibitors, once available
- Implement best-practice soil management
- Improve manure management and methane capture
- Invest in on-farm renewable energy
- Electrify machinery as WA's electricity grid decarbonises
- Increase carbon sequestration (for example by planting trees and retaining native vegetation).

Developing knowledge of carbon accounting and benchmarking supports achieving reductions.

More information

Subscribe to the Climate Resilience mailing list for updates on climate news, emissions research and events.

Future proofing regional WA

ABN: 18 951 343 745

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