ABARES

Sustainable productivity and net zero

Richard Heath, CEO

Zero Net Emissions Agriculture CRC

Transforming agriculture through innovation

Zero Net Emissions Agriculture CRC is Australia's largest Cooperative Research Centre, and the only one tasked with reducing emissions from Australian agriculture.
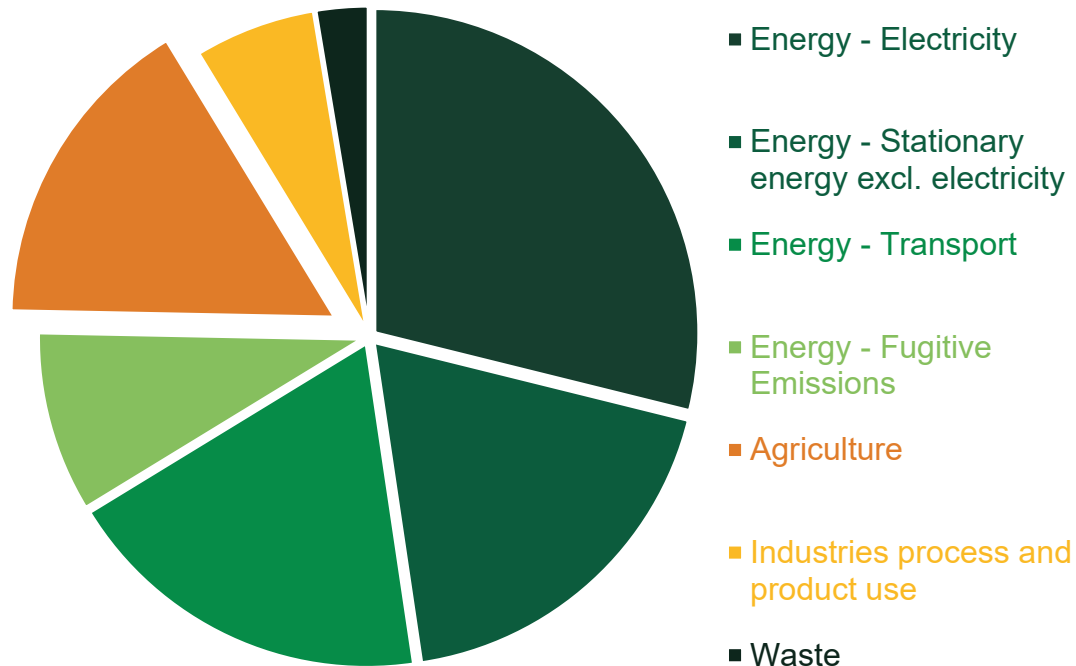
In collaboration with industry and leading researchers, the CRC conducts large-scale, long-term research to enable the implementation of emissions reduction innovation on Australian farms.

This world-leading research will empower farmers and land managers to integrate emissions reduction knowledge and practices to enhance productivity, secure a sustainable future for the industry and protect the planet.

Agriculture Emissions in Australia

Actual annual emissions by sector
(June 2023 – June 2024) *

- Energy - Electricity
- Energy - Stationary energy excl. electricity
- Energy - Transport
- Energy - Fugitive Emissions
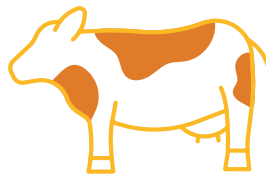- Agriculture
- Industries process and product use
- Waste

Agriculture contributes 17% of Australia's national emissions

* Source: Quarterly Update of Australia's National Greenhouse Gas Inventory: June 2024
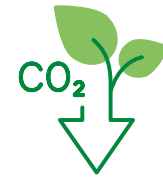
Agriculture Emitters

77% **Methane**
(livestock)

19% **Nitrous Oxide**
(crop residue burning
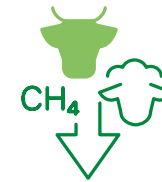and fertiliser use)

4% **Carbon Dioxide**
(lime and urea use)

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Our Research Programs

CO₂ Low emissions plant solutions

CH₄ Towards methane free cattle and sheep

Whole-farm and mixed enterprise systems analysis

Delivering value from Net Zero

Supported by

Education and Training

Producer Demonstration Sites

Our Focus

Low emissions plant solutions	Towards methane-free cattle & sheep	Whole-farm & mixed enterprise systems analysis	Delivering value from Net Zero
1. New temperate and tropical pasture seeds 2. Novel low emissions fertilisers 3. Baseline data and decision support tools for optimising cover crops and tree plantings 4. New legume variety development and best practice for legume agronomy	1. Novel individual animal methane measurement and proxies 2. Accurate GEBV for selecting low methane cattle and sheep 3. Novel low cost strategies to reduce lifetime rumen production of methane 4. Demonstration of the emissions reduction potential of technology stacking	1. Baselines and emerging international benchmarks identified. Technologies and tech stacks integrated into emissions modelling 2. Data integration platform and best practise guidelines for tech stacks 3. Life cycle assessments incorporating synergies and tradeoffs 4. Demonstration case studies	1. Policy, governance, and behavioural insights 2. Circular economy solutions including agricultural waste 3. Renewable energy solutions integrated into farming systems 4. Improved supply chain tracking and traceability of emissions

5. Education and training - PhD scholarships, Indigenous Academy, work integrated learning, scoping industry training needs, microcredentials/short courses, undergraduate modules, teacher professional development.

zneag CRC