

meatup FORUM

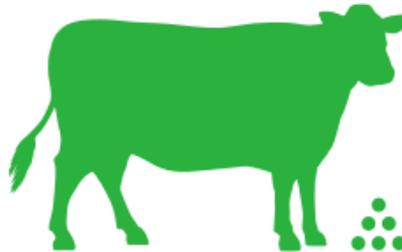
For the latest in red meat R&D

Red meat industry carbon neutral 2030 *overview*

Dr Margaret Jewell
Meat & Livestock Australia

Agenda

- Who, what, where, when, why, how?
- CN30 opportunities for red meat producers
- CN30 roadmap



Who, what, where, when, why, how?

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CN30 | Carbon Neutral
2030

INTERNAL



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Industry's focus and direction over the immediate future



Our vision

Together, we will double the value of Australian red meat sales as the trusted source of the highest quality products.



CN30 | Carbon Neutral 2030

1. Target – for the Australian red meat industry to achieve net-zero greenhouse gas (GHG) emissions by 2030
2. Coordinated RD&A effort
3. Industry target – does not require all farms/businesses/properties to be carbon neutral

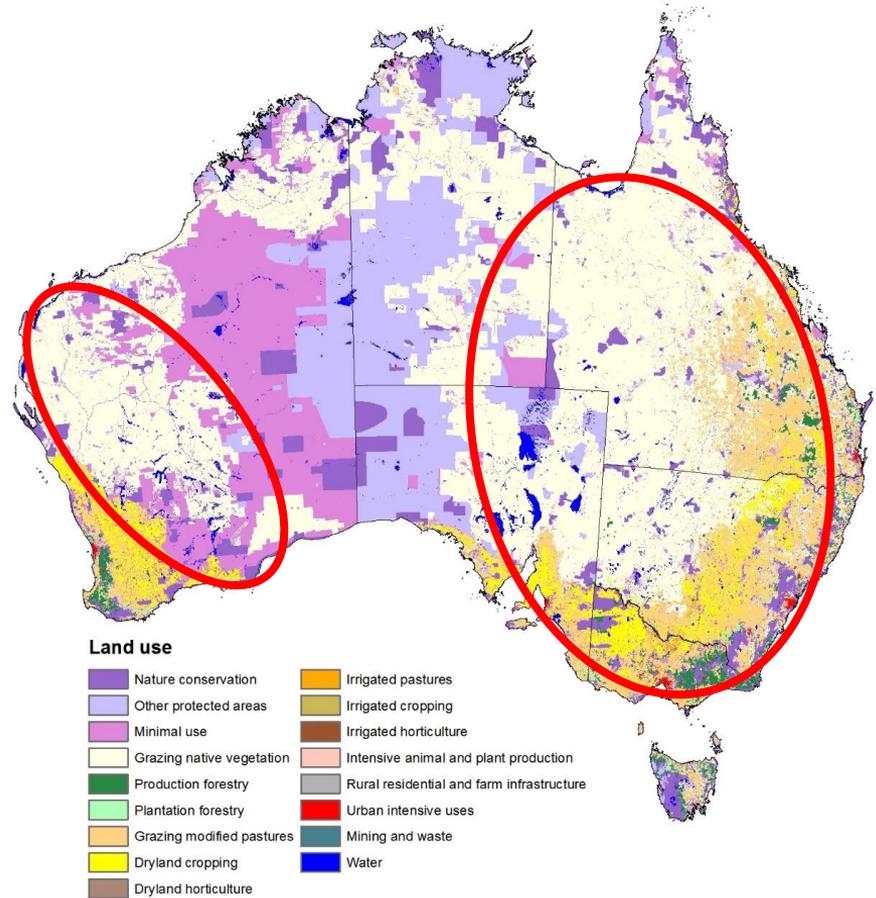


GHG emissions  **emissions captured and/or offset**  **0 CO_{2e} emissions p.a.**

GHG emissions are measured and reported by the National Greenhouse Gas Inventory accounts under Agricultural Emissions and Land Use Land Use Change categories

Where is red meat produced?

- Red meat production is a major land use in Australia – 355 mha (around 50% of land mass)
- We operate the land that offers a major carbon storage solution for Australia
- 26mill cattle, 66mill sheep, 4mill goats
- Most animals are managed in extensive production systems not economically suitable for other food production systems
- Because of geological, topographic and climatic factors, less than 8% of Australia's land is suitable for crop production.

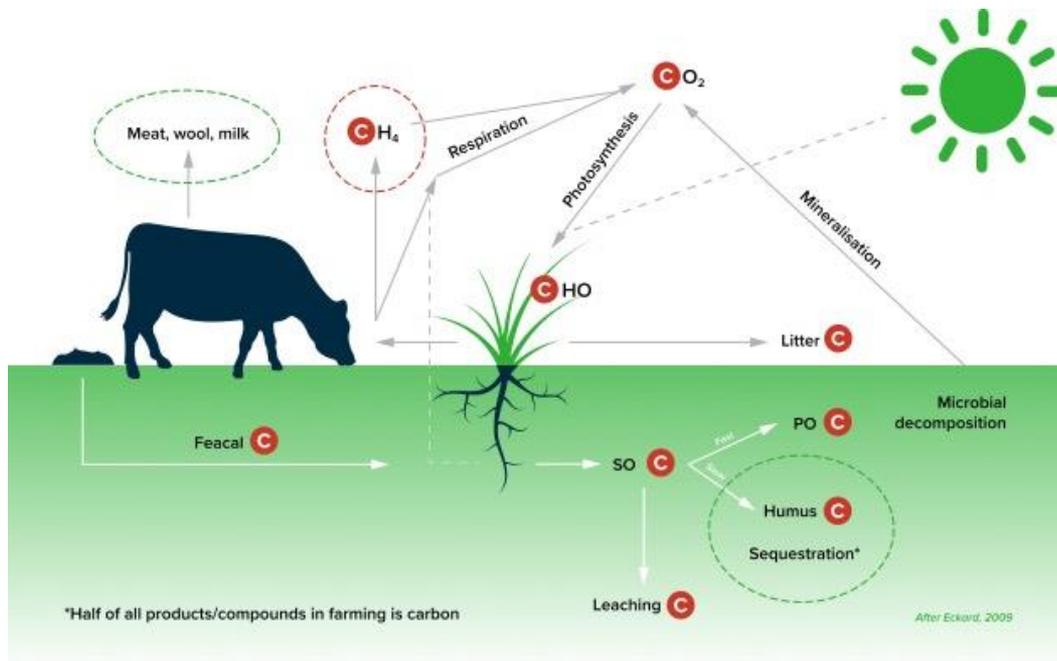


New ways of farming - carbon use efficiency

Common production efficiency metrics include NUE, WUE, FCE, EUE

Why not 'carbon use efficiency'?

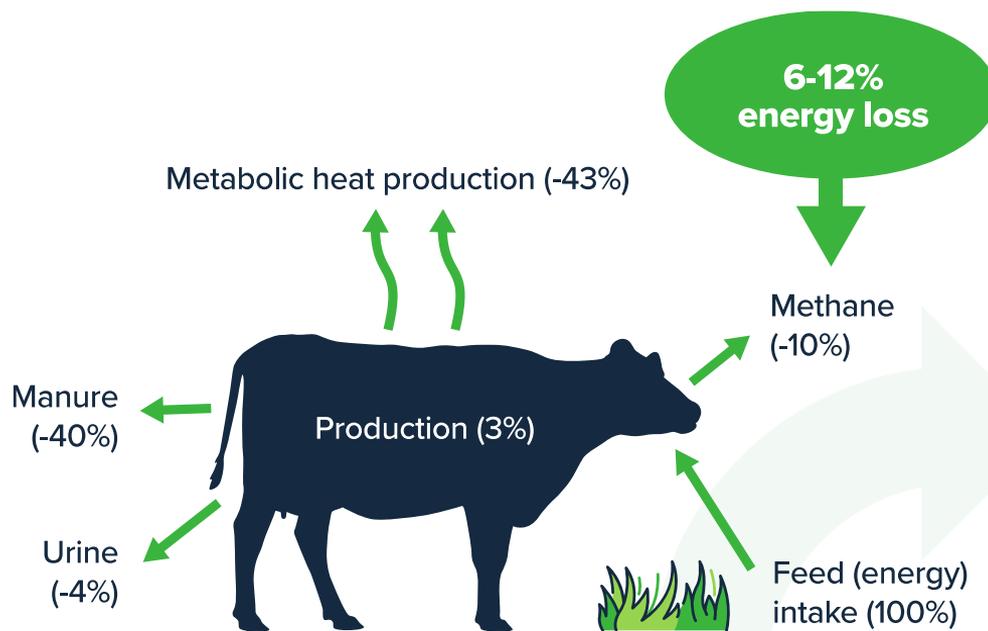
- Proportion of carbon acquired from the environment that is used for growth



Methane production in rumen = lost productivity

Did you know:

- The average cow emits 50-90kg of methane per year, equivalent to 33-60 grazing days lost a year.
- The average sheep emits 6-7 kg of methane per year, equivalent to 30-31 grazing days lost a year.



CN30 opportunities for red meat producers

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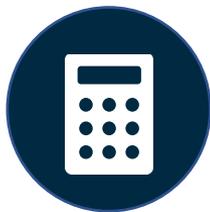


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Start with a business plan...



Start with a business plan



Do a carbon account to understand your baseline



Decide which carbon opportunities to pursue and align with your business plan



Find out what products/practices are regionally available to suit your enterprise now



Research what products/practices may become available in the future



Update your business plan with products/practices that will benefit your bottom line and have a carbon benefit

CN30 opportunities: Carbon trading projects

	Requires offsets/insets	Generates credits	Sells credits	Achieves carbon neutrality	Requires certification	Requires auditing
Australian carbon market (ERF/CSF)		 (ACCUs)	 (ACCUs)	 If only excess credits are sold	 (ACCUs are certified)	 Compliant with CER
<i>or</i>						
International carbon market				 If only excess credits are sold	 (ACCUs are certified)	 Compliant international system

CN30 opportunities: Carbon neutral / low carbon position

	Requires offsets/insets	Generates credits	Sells credits	Achieves carbon neutrality	Requires certification	Requires auditing
Carbon neutral / low carbon farm / business	✓	✓	✗ (uses as insets)	✓	✗	✓ can be done by advisor/professiona
<i>or</i>						
Carbon neutral / low carbon supply chain / product	✓	✓	✗ (uses as insets)	✓	✓	✓ compliant with certification system

Carbon neutral/low carbon position

- Define the carbon neutral/low carbon boundary

Most red meat industry stakeholders will seek to:

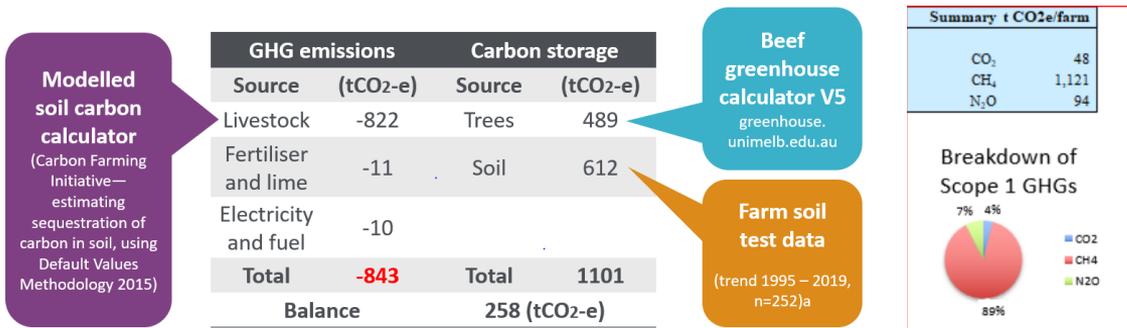
- Obtain a carbon-neutral or low carbon farm/business (certified or not certified), or
- participate in a certified carbon-neutral or low carbon supply chain/branded product line

Hold onto 'credits' to use as insets within the boundary of carbon neutrality/low carbon

- Global
- Country
- State/region
- Business
- Site
- Product

Carbon account

Calculates total GHG emissions produced and carbon sequestered on a farm/ property/ business over the course of a year



Inputs: from livestock inventory data, purchased inputs, outputs (i.e. fuel/energy/fertiliser) and carbon stored in trees and soil

Carbon footprint

Calculates total GHG emissions from the complete life cycle of a product

Inputs: all carbon account inputs plus other emissions from production of purchases (ie fertilizer, livestock purchases), transport, packaging etc.



Coles Finest Certified Carbon Neutral Beef

Some early movers...

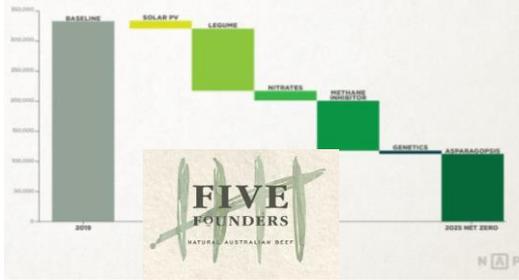
Arcadian is a 100% Carbon Neutral Business



OUR PROSPERITY IS TIED TO THE LAND. WE WANT TO DO EVERYTHING WE CAN TO KEEP THE COUNTRY HEALTHY AND PRODUCTIVE.

OUR GOAL IS NET ZERO EMISSIONS BY 2025

In 2018, Independent Consultants were engaged to calculate NAPCo's Life Cycle Assessment, evaluating the environmental impacts and resources used throughout the full life cycle of breeding, raising and delivering our product to the marketplace.



Some early movers...



CN30 roadmap

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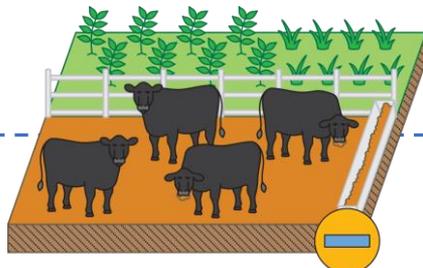


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CN30 roadmap

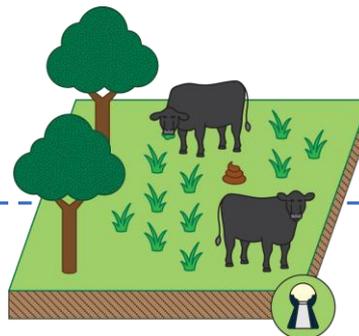


Industry leadership



GHG emissions avoidance

Grazing properties
Feedlots
Processing facilities



Carbon storage

Grazing properties



Integrated management systems

Rapid adoption
Carbon accounting
Measurement and reporting

Leadership building

- Continued improvement to carbon accounting tools
- Carbon accounting and Carbon-101 E-learning modules being developed for inclusion on MLA's Toolbox
- Developing CarbonEDGE package as part of MLA's existing range of EDGE network products
- Embedding Producer Demonstration Sites into new research investments



Emission avoidance partnership (~\$60m)

- 3-NOP early life programming trial
- further work on asparagopsis
- delivery in grazing systems (licks, bolus, water)
- genetic selection (ASBVs and EBVs)
- legumes (leucaena, desmanthus, stylos, lotus, sainfoin, tедера, hedysarium, bisserula) and multi-species pastures.

“Feed additive found to reduce methane emissions by 90% in feedlot trial.”

Beef Central, 12/05/2021

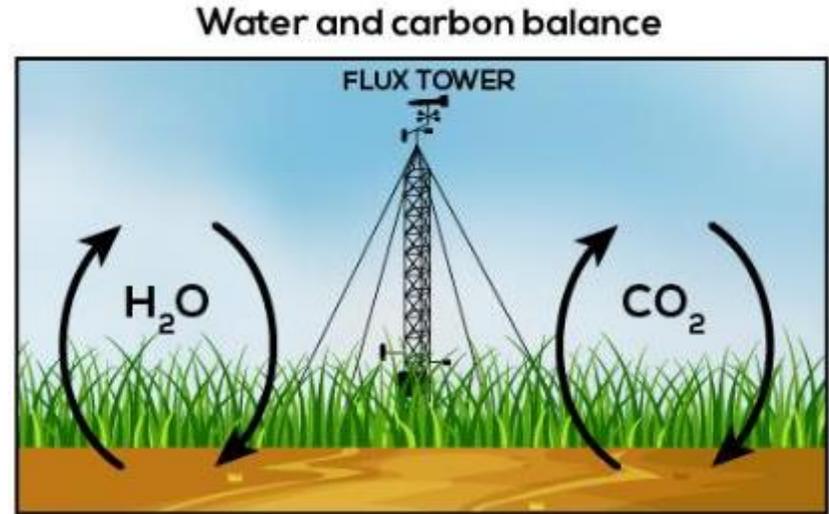
“Cows fed small amounts of seaweed burp 86% less in methane trial.”

ABC Science, 18/03/2021

Genetic selection for low methane is permanent and cumulative – can achieve reduction of 3.5 MT CO₂e for cattle and 1.8 MT CO₂e sheep by 2035.

Carbon storage partnership (\$15m)

- Next generation soil carbon measurement methods
 - on track to reduce cost of soil carbon measurement to \$8/ha (the government target is \$3/ha)
 - could reduce the number of soil samples normally taken by producers by three or four times.



Carbon storage partnership (\$15m)

- Mixed species pastures and legumes
- Grazing management
- Decision tools for planting trees on-farm.
- Use of silvopasture systems to promote co-benefits from livestock production

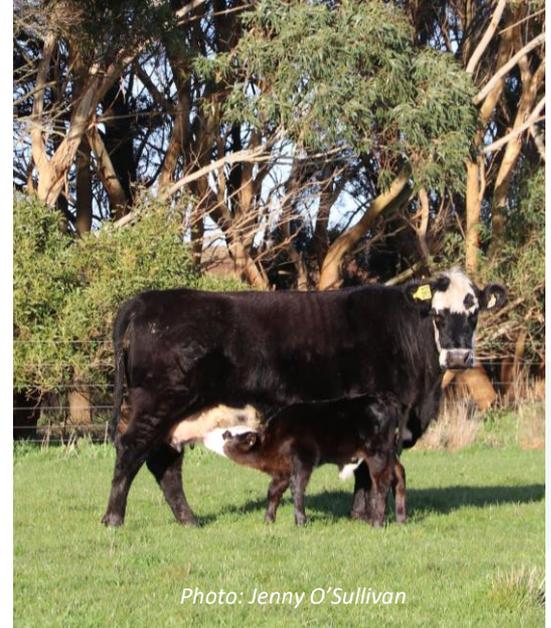


Photo: Jenny O'Sullivan

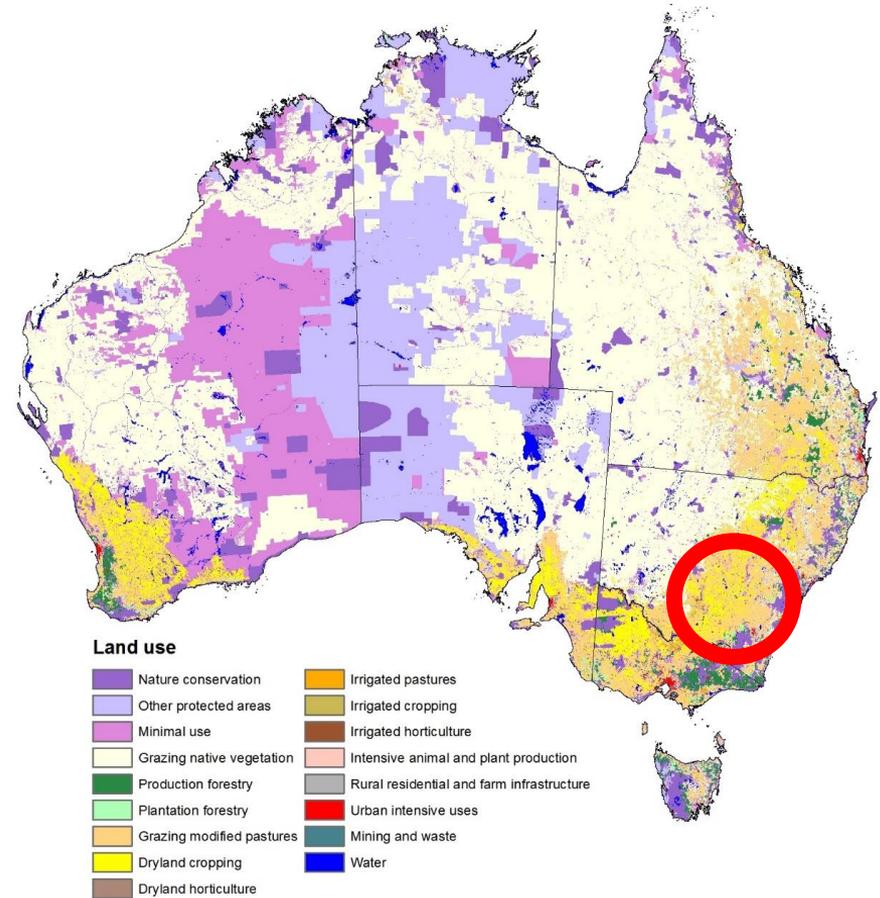
Integrated Management Systems

- Pilot carbon accounting workshops to improve on-farm carbon accounting tools and develop resources
- Working with federal government and other partners to support development of frameworks to underpin participation in carbon projects, supply chains and industry reporting
- Bringing together packages of adoption ready recommended practices and technologies to implement on farm and achieve multiple benefits



In your neck of the woods:

- Lots of variation (rainfall, soil, topography)
- Soils – low in nutrients and soil carbon
- Cropping/mixed farming common
- Feed gap management
- Trees for shade and shelter



Emissions reduction

- **Legumes** - ([Legumes Hub | Meat & Livestock Australia](https://www.mla.com.au) (mla.com.au)) and high-quality pastures
- **Feed supplements**
(available now and/or coming soon (asparagopsis, 3-NOP))
- **Genetic selection** for net feed intake efficiency and low methane
- **Herd and flock management**
(increase reproductive efficiency, reduce unproductive animals, increase weight for age etc)
- **Energy efficiency/renewable energy** options

Carbon storage

- Match vegetation and grazing management to maximise benefits for both livestock production and carbon retention
- Grazing management, legumes, deep-rooted perennials for soil carbon and productivity
- Monitor and record active dung beetle populations



Next steps

- Talk to advisor/consultant
- Collate input data for carbon accounting
- Check out SB-GAF and the carbon accounting technical manual
- Sign up to CN30 mailing list to stay tuned on updates
- Check out available State Government business/carbon resources
- Check out the CN30 Product Catalogue
- Identify any collaborative supply chain arrangements/opportunities
- Uni of Melbourne CNAg Training

COMING SOON!

- Carbon accounting/Carbon101 E-learning modules
 - CarbonEDGE
 - Environmental Credentials Platform
- ... and more

Key messages

- Collate input data for carbon account and do baseline
- Prepare/update your business plan
- Identify potential opportunities and plan for changes

SB-GAF input data

Average numbers for each livestock category across four seasons (spring, summer, autumn, winter)

Average liveweight of each livestock category across the four seasons

Estimated average daily liveweight gain of each livestock category across the four seasons

The number of head purchased for each livestock category

The average liveweight of each head purchased in each livestock category

Region where most livestock were purchased from

The number of head sold for each livestock category

The average liveweight of each head sold in each livestock category

Percentage of cows calving/ewes lambing



Thank you.

Tools and resources

[CN30 Roadmap](#)

[CN30 product catalogue](#)

[Fact sheet for developing a carbon neutral brand](#)

[Fact sheet for becoming carbon neutral by 2030](#)

[CN30 webpage](#)

[Sustainability webpage](#)

[GHG accounting calculators](#)

[Technical manual](#)

[Australian Good Meat](#)

[Red Meat Green Facts](#)

[Australian Beef Sustainability Framework](#)

[Australian Sheep Sustainability Framework](#)