



Monogastric livestock systems including pork, poultry meat and eggs

Low carbon footprint diets

One of the main contributors to the carbon footprint of pork and poultry products is the use of imported soy in feed rations. GHG emissions result from land use change (i.e. deforestation) associated with expansion of soy production in South America, and transport emissions. This measure involves replacing imported soy with domestically produced protein. It will reduce industry's scope 3 emissions, and the carbon footprint of the products, but it **will not reduce NSW emissions**, as international land use change (LUC) emissions and international transport are not counted in the NSW GHG inventory. This measure could stimulate local legume production, providing sustainability benefits to cropping systems.

An alternative dietary approach to reducing the life cycle carbon footprint of monogastric livestock products involves optimising protein balance to reduce nitrogen content of manure, and therefore N₂O emissions.

Co-benefits:

Economic: Enhanced market access by meeting “deforestation-free” supply chain requirements.

Environmental: increased demand for locally-produced legumes leading to increased inclusion of legumes in crop rotations, with benefits for soil health, biodiversity and resilience of farming systems.

Focus Area	Actions	Timeframe	Relevant stakeholders
Capability and confidence	Promote alternative measures to reduce carbon footprint associated with diet, such as optimal protein percentage to minimise N ₂ O emissions from manure	<2 years	Australian Government, NSW Government, livestock bodies, RDCs
	Promote use of alternative protein sources including other pulses or local soy	2-5 years	RDCs
Research and development	Fund R&D into suitable soy replacements	2-5 years	RDCs



Stakeholder Feedback

- Feed is the most significant cost and emissions source in poultry, a sector which is mostly a price-taker. Farmers cannot bear the entire cost of emission reduction and compliance with “deforestation-free” requirements (emerging in some markets and initiatives, such as Science-based targets initiative (SBTi) in a context where costs can't be passed on to the consumer.
- Animal nutrition is linked to welfare, health, and flock mortality – producers can't afford to take risks with feed formulations.
- Industry stakeholders want more investment in collaborations with cropping sector, universities and RDCs, to support research and development and commercialisation of multiple alternative protein feeds. This will ensure consistent supply, increase cost competitiveness, and prevent market failures.
- Effort should focus on improving feed efficiency, which indirectly reduces emissions intensity, such as through genetic selection for higher feed efficiency, and improving animal health and nutrient balance in the diet.
- Explore smart marketing and consumer education to incentivise price premiums associated with emission reduction strategies.



Relevant policies and incentives

- LPIN/NSW DPIRD: Optimising pig diets for decarbonisation (NSW Decarbonisation Hub project)
- AIA Environmental Accounting Platform



Barriers & market failures

- Impacts of low GHG feed on welfare, health, and flock mortality not clear.
- Insufficient local soy available to meet demand (but other suitable feeds are available).
- Excluding imported soy is likely to increase cost of rations, and reduce profitability unless costs passed on to consumers.
- Substituting soy for other protein sources would require new feed formulations .
- Will not reduce NSW GHG inventory because offshore emissions are reported by the country in which they occur. May not reduce global emissions, because protein meal is a constrained market, so the South American soy will be used meet global demand for protein meal, with no net benefit.
- Information deficiencies
 - Producers – unable to label/get a premium for low methane products to cover extra costs. Lack of information on pros and cons of alternative feeds,
 - Consumers – unable to differentiate low emission products.