Case Study

Producer 2

Producer 2 is a large farrow-to-finish producer, operating a primarily conventional system. A product carbon footprint (PCF) (kg CO_2-e/kg liveweight) was determined as part of the 2022 industry lifecycle assessment (LCA), demonstrating that the farm produces pigs with a PCF 9% lower than the national average[1].

A carbon account (t CO_2-e) was determined for the producer for 2022. However, due to changes to the business structure, there are now gaps (emission sources not assessed) in the carbon account.

Greenhouse gas (GHG) emissions profile:

Emission source	FY22 (% total emissions)
Scope 1 – Emissions from manure	54%
Scope 1 – Enteric methane	5%
Scope 1 & 2 – Energy	3%
Scope 1 & 2 total	**63%**
Scope 3 – Feed commodity production, transport & other Scope 3 sources	35%
Scope 3 – Land use and direct land use change emissions	2%
Upstream Scope 3 – total:	**37%**

[1]Copley, M. A., McGahan, E. J., McCormack, K., & Wiedemann, S. G. (2024). Environmental impacts of Australian pork in 2020 and 2022 determined using lifecycle assessments. Animal Production Science, 64(8). https://doi.org/10.1071/AN23352

Process:

A collaborative workshop was held to understand Producer 2's current approach to reducing emissions and discuss needs and gaps in knowledge and resources. Major points raised in the workshop included the following:

- Installing covered anaerobic ponds (CAPs) is a focus for Producer 2 to reduce on-farm emissions. The following were raised as challenges associated with this:
  - Regulatory constraints around obtaining ACCUs (i.e. meeting newness and additionality requirements for registered ACCU Scheme projects)
  - High capital costs (particularly earthworks, concreting and lining ponds) and ongoing costs (i.e. auditing if registered as an ACCU project).
- Producer 2 is also factoring in Australia's renewable energy transition as part of their approach to decreasing their Scope 2 (grid electricity) emissions.
- Uncertainties include feed wastage estimates – which may result in either under or overestimating emissions for the producer's PCF and carbon account – as well as discrepancies between predicted and actual biogas emissions from CAPs.
- The producer highlighted the value of having an auditable industry-endorsed model for GHG emissions predictions.
- Other potential emissions reduction strategies (e.g. solids separation, electrification of heating) were discussed, however, these were not identified as priority strategies at this point in time or were not compatible with CAPs.

A first-order emissions reduction plan to 2030 was developed, outlining planned emissions reduction strategies and predicted emissions reduction potential. As the major emissions reduction strategy was covering ponds and registering ACCU projects to sell credits and fund the next pond, there would be no emissions reduction in manure-related emissions before the crediting period expired. By selling ACCU credits from the project, the producer would effectively be selling the emissions reduction to a third party, and any reduction in the producer's carbon account whilst they were selling credits would be double-counting.

Industry needs:

A key issue raised by the producer to make on-farm emissions reduction via CAPs more achievable is the need to revise ACCU Scheme eligibility requirements. The current regulation requires a project to be new and to go beyond business-as-usual activities, e.g. the producer cannot have a pre-existing CAP or include a CAP in a development application, making it difficult to register as an ACCU project. The ability to obtain ACCU credits is critical to the financial viability of CAPs for Producer 2, where the credits obtained from one pond are needed to finance the construction of the next. This was also raised as a barrier to adoption by other producers engaged throughout the project.

Producer 2 highlighted challenges associated with measuring feed waste for individual farms and the uncertainties this causes in CAP biogas estimates. Ongoing research to develop practical, cost-effective methods for measuring feed waste at the individual farm level is needed.

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