

PigGas Report 3 – 1,100 sow, farrow to finish, conventional piggery, Qld.

September 2013



Production details

This is a large family owned conventional piggery, with breeding and growing pigs on one site in naturally ventilated sheds. The majority of the pigs are sold targeting markets at 107 kg live weight. The herd is closed from external live introductions.

Feed consumption

Feed is milled and mixed onsite and is fed in mash form. The ration is based on locally grown cereal grains with total feed consumed at 6,738 t/yr.

Sales/Tranfers

23,247 pigs/yr are sold with a total dressed weight of 1,896t/yr.

Waste management systems

Two manure collection systems are utilised on the piggery. Weaners are raised on sawdust and straw bedding with manure flushed from the remaining sheds which have underfloor collection systems. Liquid effluent is then processed using an anaerobic pond system with water recycled into the flushing system.

Manure reuse systems

If required, effluent from the anaerobic holding ponds and spent bedding can be distributed across cropping land surrounding the piggery. A range of summer and winter crops is grown.

On-Farm Baseline Emissions

The current baseline on farm emissions for this piggery total **9,676 tonnes CO₂-e/yr** with an emissions intensity of **5.10 kg CO₂-e/kg HSCW**.

On-Farm Emissions Reduction Scenario

Like most conventional piggeries with anaerobic ponds, the majority of emissions on this piggery come from pond methane. The option of covering the ponds to capture and reuse methane for on-site energy replacement was modelled. A replacement of 75% of current electricity usage was considered.



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This scenario (see table below) reduced on-farm emissions from 9,676 t/yr to 2,171 t/yr and reduced kg CO₂-e/kg HSCW from 5.10 to 1.14 (78% reduction). The economic returns from this investment were not considered.

Annual Greenhouse Gas Emissions Profile (calculated using PigGas)

Emissions	Current Emissions Baseline	Reduction Scenario (kg CO ₂ -e/yr)
Pre-farm		
Grain	1,684,399	1,684,399
Milling & delivery	323,405	323,405
Pig freight		
Straw & bedding	31,640	31,640
Total Pre-farm		
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	201,389	50,347
Fuel - stationary	182,464	182,464
Fuel - transport	78,678	78,678
<i>Enteric CH₄</i>	227,585	227,585
<i>Manure management</i>		
MMS CH ₄	8,287,419	923,601
MMS – direct N ₂ O	75,546	75,546
MMS – Atmos. deposition N ₂ O	243,913	3,473
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	14,611	24,259
Soil – leaching & runoff N ₂ O	364,149	604,588
Total On-farm	9,675,754	2,170,542
Post-farm		
Pig freight		
Meat processing	758,424	758,424
Exported manure		
Total Post-farm		
Dressed weight sold - HSCW (kg/yr)	1,896,060	1,896,060
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	1.08	1.08
On-farm	5.10	1.14
Post-farm	0.40	0.40
Total	6.58	2.62



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