

PigGas Report 36– 350 sow, farrow to finish, multisite conventional and deep litter piggery Qld.

September 2014



Production details

This is a medium sized, family owned, conventional and deep litter piggery on two sites. The main site is a closed farrow to finish herd using artificial insemination. It contains the breeding herd, weaner pigs and over half of the growing and finishing pigs in a combination of conventional naturally and mechanically ventilated sheds. One shed of weaner pigs are housed on this site on straw-based deep litter.



The remaining growing and finishing pigs are grown out on a second remote site by a contractor. On this site, the first stage growers are housed in a sawdust based deep litter shed and the later stages are grown in conventional flushed sheds.

Finisher pigs from both sites are grown to approximately 95 kg live weight for the butcher and supermarket trade.

Feed consumption

Cereal feed grains are grown on-site. These are milled and mixed into a range of pig diets on-site. Total feed consumed is 2,844 t/yr.



Sales/Tranfers

Approximately 4,053 weaner pigs/yr are transferred from the Breeding Site to the Contract Grower Site. A total of 10,458 pigs/yr are sold from both sites with a total dressed weight of 763 t/yr.



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Waste management systems

On each site, manure is flushed from conventional sheds in underfloor drains to anaerobic treatment ponds followed by secondary treatment ponds from which effluent is recycled for shed flushing.

Manure reuse systems

Excess effluent from the secondary treatment ponds on both sites is regularly irrigated to pastures used for cattle



grazing and to some cropping areas. Pond sludge and spent litter solids are spread on cropping land. Total property area is approximately 800 ha of summer and winter cereals comprising sorghum, wheat barley, field peas, chickpeas and mung beans.

On-Farm Baseline Emissions

The current baseline emissions for this piggery total **2,838 tonnes CO₂-e/yr** with an emissions intensity of **3.72 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. However, covering the pond to capture and flare methane or to generate electricity was not considered a viable scenario for this piggery due to its relatively small size and the separation of manure loads at two distant sites.

However, there are two options available to reduce on-farm emissions at both sites. The first is to reduce feed wastage of the weaner, grower, porker and finisher pigs (10% to 5%) by adjusting feeders and replacing some wasteful types of feeders. The second is to sell or export all deep litter solids from both sites for use as fertiliser on other neighbouring properties.

This scenario (see table below) reduced on-farm emissions **from 2,838 t/yr to 2,329 t/yr** and reduced kg CO₂-e/kg HSCW **from 3.72 to 3.05 (18% reduction)**.



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Annual Greenhouse Gas Emissions Profile (calculated using PigGas)

Emissions	Current Emissions Baseline	Reduction Scenario (kg CO ₂ -e/yr)
Pre-farm		
Grain	710,975	679,650
Milling & delivery	0	0
Pig freight	0	0
Straw & bedding	6,709	6,709
Total Pre-farm	717,684	686,359
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	147,636	147,636
Fuel - stationary	3,756	3,756
Fuel - transport	59,930	59,930
<i>Enteric CH₄</i>	95,386	95,402
<i>Manure management</i>		
MMS CH ₄	2,127,748	1,680,604
MMS – direct N ₂ O	147,034	135,498
MMS – Atmos. deposition N ₂ O	103,906	96,809
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	146,371	105,237
Soil – leaching & runoff N ₂ O	5,873	4,223
<i>Offsets</i>	0	0
Total On-farm	2,837,639	2,329,094
Post-farm		
Pig freight	0	0
Meat processing	305,396	305,396
Exported manure	0	32,505
Total Post-farm	305,396	337,901
Dressed weight sold - HSCW (kg/yr)	763,491	763,491
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	0.94	0.90
On-farm	3.72	3.05
Post-farm	0.40	0.44
Total	5.06	4.39



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