

PigGas Report 40 – 1,800 sow, breeder only, conventional piggery, Qld

September 2014



Production details

This is a large corporately owned conventional breeder only piggery which produces piglets weaned at 24 days old and 7 kg live weight for sale to another remote piggery for growing out. Pigs are bred mainly in naturally ventilated sheds and one tunnel ventilated shed.

Feed consumption

All feed supplied to the piggery is purchased off-site as milled and mixed rations from a commercial feed company. The total feed consumed is 1,986 t/yr.

Sales/Tranfers

Approximately 900 gilts/yr are purchased from a remote piggery each year and brought onto the piggery. Approximately, 40,400 pigs/yr, comprising mainly weaned piglets and some culled sows and boars are sold with a total net dressed weight of 267 t/yr.

Waste management systems

Manure is flushed from each shed in underfloor drains to two separate primary anaerobic ponds which overflow to secondary treatment pond and a tertiary holding pond.



The National PigGas Extension Project is funded by Ian Kruger Consulting, the Australian Government and Australian Pork Limited.

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Manure reuse systems

Effluent is recycled from the tertiary holding pond for shed flushing and irrigated to pasture used for cattle grazing. Approximately 20% of total pond effluent, including sludge, is exported off-site to a neighbouring property to replace conventional fertiliser in cropping operations.

On-Farm Baseline Emissions

The current baseline emissions for this piggery total **1,813 tonnes CO₂-e/yr** with an emissions intensity of **7.73 kg CO₂-e/kg HSCW**.

On-Farm Emissions Reduction Scenario

The piggery management is currently considering the possibility of two options to generate electricity on-site. The first option is install solar panels at the piggery. The second option is to install a new covered anaerobic pond at the site and collect the biogas to generate electricity to replace all site electricity usage. Since the majority of emissions on this piggery come from pond methane, the latter biogas option was modelled as the greenhouse gas reduction scenario.

This scenario (see table below) reduced on-farm emissions **from 1,813 t/yr to 424 t/yr** and reduced kg CO₂-e/kg HSCW **from 7.73 to 1.59 (77% reduction)**.

The technical and financial feasibility of a biogas/energy project compared with the installation of solar panels needs careful consideration by specialist consultants.

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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	496,434	496,434
Milling & delivery	95,315	95,315
Pig freight	670	670
Straw & bedding		
Total Pre-farm	592,419	592,419
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	248,160	0
Fuel - stationary	7,387	7,387
Fuel - transport	0	0
<i>Enteric CH₄</i>	66,516	66,516
<i>Manure management</i>		
MMS CH ₄	1,554,726	172,747
MMS – direct N ₂ O	19,159	19,159
MMS – Atmos. deposition N ₂ O	76,635	0
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	91,809	153,116
Soil – leaching & runoff N ₂ O	3,684	6,144
<i>Offsets</i>	0	0
Total On-farm	1,812,527	424,069
Post-farm		
Pig freight	2,616	2,616
Meat processing	145,197	145,197
Exported manure	23,873	39,815
Total Post-farm	171,686	187,628
Dressed weight sold - HSCW (kg/yr)	267,484	267,484
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	2.21	2.21
On-farm	7.73	1.59
Post-farm	0.64	0.70
Total	10.59	4.51



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