

PigGas Report 10 – 660 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. Most of the pigs are sold for domestic markets at a target weight of 107 kg live weight. The herd is closed from external live introductions.

Feed consumption

Feed is purchased from a commercial feed mill. The ration is fed in a pelleted form with total feed consumed at 4,935 t/yr.

Sales/Transfers

15,860 pigs/yr are sold with a total dressed weight of 1,314 t/yr.

Waste management systems

Two manure collection systems are utilised on this piggery. Manure is automatically flushed from some sheds in underfloor collection systems. Grower sheds have solid floors which are washed to collection drains at the rear of pens. Effluents is then processed through a three stage anaerobic pond system.



Manure reuse systems

If required, effluent from the anaerobic holding ponds can be irrigated onto 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 **6,617 tonnes CO₂-e/yr** with an emissions intensity of **5.03kg 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 6,617 t/yr to 1,458 t/yr and reduced kg CO₂-e/kg HSCW from 5.03 to 1.11 (78% reduction). The economic returns from this investment were not considered.

Annual Greenhouse Gas Emissions Profile (calculated using PigGas)

Emissions	Current Emissions Baseline (kg CO ₂ -e/yr)	Reduction Scenario (kg CO ₂ -e/yr)
Pre-farm		
Grain	1,233,818	1,233,818
Milling & delivery	236,893	236,893
Pig freight		
Straw & bedding	7,232	7,232
Total Pre-farm	1,477,943	1,477,943
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	355,908	88,977
Fuel - stationary	28,565	28,565
Fuel - transport	49,174	49,174
<i>Enteric CH₄</i>	171,373	171,373
<i>Manure management</i>		
MMS CH ₄	5,512,081	612,453
MMS – direct N ₂ O	44,530	44,530
MMS – Atmos. deposition N ₂ O	178,120	
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	266,735	17,850
Soil – leaching & runoff N ₂ O	10,703	444,855
Total On-farm	6,617,189	1,457,777
Post-farm		
Pig freight		
Meat processing	525,720	525,720
Exported manure		
Total Post-farm	525,720	525,720
Dressed weight sold - HSCW (kg/yr)	1,314,300	1,314,300
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	1.12	1.12
On-farm	5.03	1.11
Post-farm	0.40	0.04
Total	6.55	2.63



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