

PigGas Report 18 – 28,000 pig wean to finish, conventional piggery, Vic.

December 2013



Production details

This is a corporately owned conventional piggery comprising 23 sheds. It receives weaner pigs at 3 weeks of age which are transported to the site from another breeder piggery. It grows them out to 23 weeks at which age the finishers are sold for the fresh pork market at 98 kg live weight.



Feed consumption

The majority of the pig feed is purchased and transported to the site where it is milled and mixed into a range of diets for different pig ages. Total feed consumed by pigs is 13,952 t/yr.

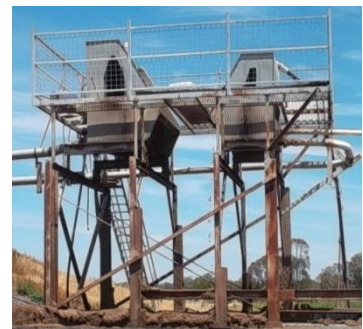
Sales/Tranfers

72,800 weaned pigs/yr are transported to the site from the breeder piggery using the owner's truck. 69,680 pigs/yr are sold with a net dressed weight of 4,719 t/yr. These pigs are transported to the abattoir by external contractors.



Waste management systems

Manure is flushed from the sheds, collected in sumps and pumped to twin run-down screens which separate coarse solids. The effluent is then pumped into a covered anaerobic lagoon which was built six years ago to alleviate an odour problem at the site. Biogas from this pond is combusted with an enclosed flare. Effluent from the covered lagoon flows to a secondary treatment pond and then to a holding pond for irrigation.



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Sludge is regularly pumped from the covered lagoon to three shallow drying basins and dried.

Manure reuse systems

Effluent from the holding pond is flood irrigated to 80 hectares of summer and winter cereals.

Excavated sludge from the drying basins is used

as fertilizer and spread on the property. The total property area cropped to corn, wheat barley and canola is 470 ha. All solids from the run-down screens are sold off-site as fertiliser.



On-Farm Baseline Emissions

The current baseline emissions for this piggery total **5,801 t CO₂-e/yr** with an emissions intensity of **1.23 kg CO₂-e/kg HSCW**.

On-Farm Emissions Reduction Scenario

The emissions on this piggery are very low due to the existing covered pond and pond methane flaring. The owners are now planning to take their project to the next stage by using the biogas to generate electricity to replace all current on-site electricity use (775,500 kWh/yr). In addition, biogas will be used to heat weaner sheds, replacing all LPG used on-site (201,700 L/yr).

This scenario (see table below) reduced on-farm emissions **from 5,801 t CO₂-e/yr to 3,927 t CO₂-e/yr** and reduced kg CO₂-e/kg HSCW **from 1.23 to 0.83 (32% reduction)**.



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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	3,488,001	3,488,001
Milling & delivery		
Pig freight		
Straw & bedding		
Total Pre-farm	3,488,001	3,488,001
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	1,563,020	
Fuel - stationary	536,607	226,047
Fuel - transport		
<i>Enteric CH₄</i>	522,149	522,149
<i>Manure management</i>		
MMS CH ₄	1,539,724	1,539,724
MMS – direct N ₂ O	118,209	118,209
MMS – Atmos. deposition N ₂ O		
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	1,180,908	1,180,908
Soil – leaching & runoff N ₂ O	340,102	340,102
<i>Offsets</i>		
Total On-farm	5,800,718	3,927,138
Post-farm		
Pig freight	390,604	390,604
Meat processing	2,021,277	2,021,277
Exported manure	235,655	235,655
Total Post-farm	2,647,537	2,647,537
Dressed weight sold - HSCW (kg/yr)	4,719,187	4,719,187
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	0.74	0.74
On-farm	1.23	0.83
Post-farm	0.56	0.56
Total	2.53	2.13



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