

PigGas Report 50 – 500 sow, farrow to grower, conventional and deep litter piggery, Vic.

December 2014



Production details

This is a medium sized family owned conventional and deep litter piggery. The piggery breeds pigs and grows them to 50 kg live weight. In addition, weaned piglets from a remote 700 sow breeder piggery are transferred to this piggery for growing to 50 kg live weight. The combined grower pigs are then transferred to a remote finisher piggery. Weaner pigs are housed in naturally ventilated, straw-based deep litter sheds. All other stock are housed in naturally ventilated conventional flushed sheds



Feed consumption

Dry feed rations, which comprise a proportion of the pigs' diets, are purchased off-site. Dairy factory by-products (whey, milk, cheese and ice cream) are transported to the site and mixed on-site with the dry feed rations and liquid fed to all the dry sows, weaner and grower pigs. All other pigs are fed dry rations. Total feed consumed by all pigs is 3,375 t/yr.



Sales/Tranfers

15,600 additional weaned piglets are transferred to this piggery for growing. 27,047 grower pigs are transferred from this piggery to a remote grow-out piggery for finishing to sale weights. 347 culled sows are sold. This results in a net dressed weight produced of 983 t/yr.



Waste management systems

Underfloor and open drains in the conventional sheds are flushed regularly with fresh water. Effluent is drained to a primary anaerobic pond followed by a secondary treatment pond. Deep litter weaner sheds are filled with 300mm of straw to absorb all manure during each batch of pigs.



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Manure reuse systems

Effluent from the secondary storage pond is irrigated to corn, lucerne and pastures used for grazing cattle. Spent litter solids are removed from deep litter sheds with a front end loader and stockpiled before spreading with a manure spreader twice a year on summer and winter cereal crops. The total farm area is approximately 360 hectares.



Emissions Offset

A 15 kW solar panel array generates approximately one third of the electricity used on site, offsetting emissions of 66 tonnes CO₂-e/yr.

On-Farm Baseline Emissions

The current baseline emissions for this piggery total **2,214 tonnes CO₂-e/yr** with an emissions intensity of **2.25 kg CO₂-e/kg HSCW**.

On-Farm Emissions Reduction Scenario

The owners are planning to construct new deep litter housing for 38% of the dry sows currently housed in conventional sheds. In addition, the owners are considering installing a further 30kW solar panel array to offset the remaining on-site electricity purchased from the grid.

This scenario (see table below) will reduce on-farm emissions **from the current 2,214 t/yr to 1,934 t/yr** and reduce emissions intensity from **2.25 to 1.97 kg CO₂-e/kg HSCW (12%)**.



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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	843,819	843,819
Milling & delivery	162,013	162,013
Pig freight	0	0
Straw & bedding	18,750	22,175
Total Pre-farm	1,024,582	1,028,007
On-farm		
<i>Fuels & energy</i>		
Purchased electricity	133,157	0
Fuel - stationary	175,659	175,659
Fuel - transport	172,670	172,670
<i>Enteric CH₄</i>	149,567	149,567
<i>Manure management</i>		
MMS CH ₄	858,755	806,425
MMS – direct N ₂ O	385,411	424,883
MMS – Atmos. deposition N ₂ O	149,589	150,628
<i>Waste applied to soil</i>		
Soil – direct N ₂ O	197,482	196,048
Soil – leaching & runoff N ₂ O	56,875	56,462
<i>Offsets</i>	-65,586	-198,743
Total On-farm	2,213,579	1,933,599
Post-farm		
Pig freight	0	0
Meat processing	433,216	433,216
Exported manure	0	0
Total Post-farm	433,216	433,216
Dressed weight sold - HSCW (kg/yr)	982,529	982,529
Carbon footprint	(kg CO₂-e / kg HSCW)	(kg CO₂-e / kg HSCW)
Pre-farm	1.04	1.05
On-farm	2.25	1.97
Post-farm	0.44	0.44
Total	3.74	3.46



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