

Energy Savers Plus Program

targets significant energy savings for

Queensland Piggeries

POTENTIAL
SOLUTION



AVERAGE
ENERGY
SAVINGS

106%

Key facts

Farm / Industry

Piggeries

Product

Pig Meat

Location

Queensland

Case study focus

Industry and Technology

Solution

Install pump and irrigation upgrades, HVAC systems, LED lights, solar and batteries, and improve gas systems.

Summary

The Energy Savers program aims to assist farmers to reduce energy costs by supporting the accelerated adoption of improvements in on-farm energy use. This case study summarises the outcomes from audits conducted on 2 Queensland Piggeries.

Collectively the total energy consumption consumed from the measured areas on the 2 piggeries was 458,344kWh at an annual cost of \$103,203, resulting in emissions of 371 tonnes of CO₂-e per annum

Opportunities

The main opportunities identified at the Piggeries include:

- **Pumping and Irrigation**- Savings from Variable Speed Drive installation, pump replacements and maintenance. Changes to irrigation design and automation.
- **Heating Ventilation and Cooling (HVAC)**- Condensor motor, VSD, ventilation fans and heating upgrades.
- **Lighting and General**- Replacement and retrofitting of lights with LEDs, infrastructure and general changes.
- **Solar and Batteries**- Grid Connected and standalone.
- **Gas**- Hot water, insulation and general heating.
- **Solar Systems**- Ranging in size from 5-100kW.

Table 1. Technology Recommendations and Savings in the Poultry Industry.

Recommendation	Total	Energy Savings (kWh)	Cost Savings (\$)	Capital Cost (\$)	Average Payback (Years)	Emission Reduction (CO ₂ -e)
Pumping and Irrigation Upgrades	1	7,558	1,504	10,000	4.3	6
HVAC	2	14,400	5,373	48,000	15.6	12
Lighting and General	3	45,655	8,674	19,495	7.9	37
Solar and Batteries	1	13,000	1,900	29,000	11	10
Gas- Insulation of pipes, solar/gas hot water and heating improvements	3	300,836	46,500	90,600	4	244
Solar Systems	4	107,275	22,513	103,100	3.9	87
Total	14	488,724	86,464	300,195	7.2	396
Total Recommendations	665	7,459,015	2,817,342	12,784,670	6.85	6,042

The Energy Savers Plus Program Extension is funded by the Queensland Department of Energy and Public Works.



Table 1 highlights that total energy savings of 488,724 kWh were discovered from the audit process.

Including production benefits, a saving of \$86,464 and estimated 396 tonnes of CO₂-e could be realised per annum. At a capital cost of \$300,195 the average payback was 7.2 years.

Additional value adding from the energy audits showed how an increase in water delivery, could increase production and profit with a reduction in energy consumed per unit of output.

Table 2. Pre and Post Audit Metrics.

Metric	Pre-Audits	Post-Audits	Reduction (%)
Energy Consumption (kWh)	458,344	-30,380	106
Energy Costs (\$)	103,203	16,739	83
Emissions (CO ₂ -e)	371	-25	106

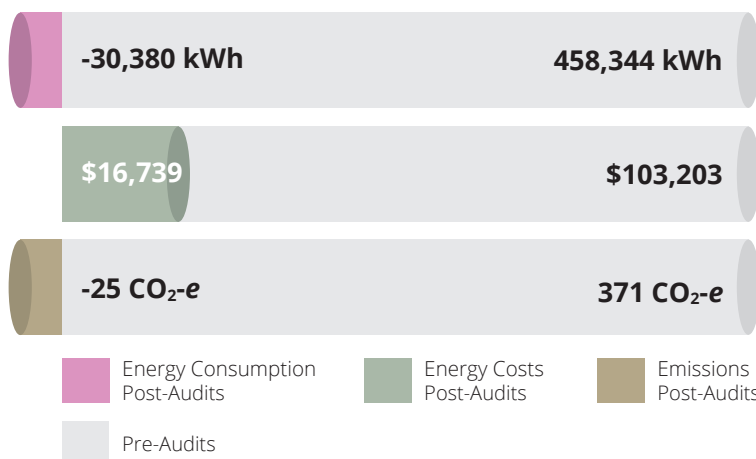
As installation of the recommendations is made within the industry, measurement and verification will be undertaken, and case studies will be updated to include the actual energy savings.

Energy Audits for your Business

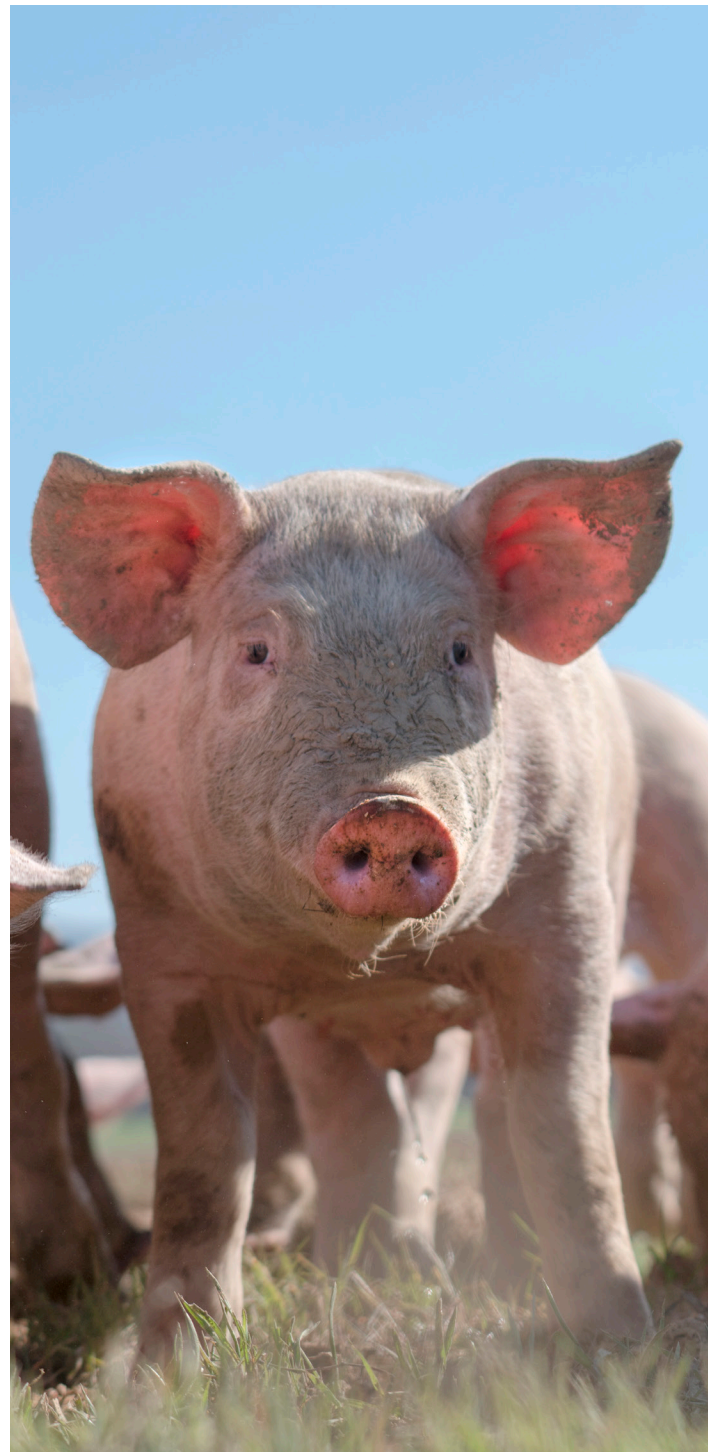
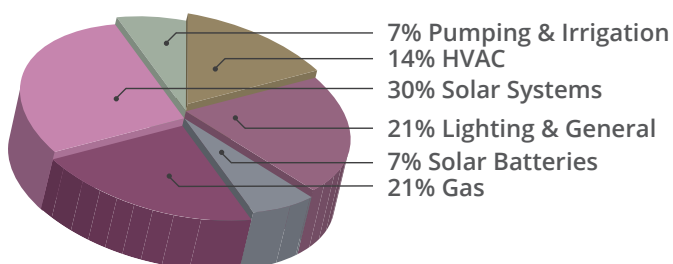
An energy audit is a great way for a business to identify the most effective way to cut costs, reduce emissions and boost productivity.

See other case studies including sector case studies and technology case studies at the website:
www.qff.org.au/newsroom/case-studies/

Graph 1: Energy Savings Pre vs Post Audits



Graph 2: Energy Saving Opportunities in piggeries



PROPOSED 22% energy savings 62.3^T CO₂ savings 14,060^{\$} cost savings



PROPOSED 27-66% energy savings 931^T CO₂ savings 107,766^{\$} cost savings



Case studies

To see how other agriculture businesses are saving energy and costs, go to www.qff.org.au/energysavers