Energy Savers Program

targets significant energy savings for

Queensland Grain and Feedlot

POTENTIAL SOLUTION

AVERAGE ENERGY SAVINGS 44%

Key facts

Farm / Industry

Grain and Feedlots

Product

Grain and Cattle

Location

Queensland

Case study focus

Industry and Technology

Solution

Install new pumps, heating, cooling, lighting and solar 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 5 Queensland Grain farms and Feedlots.

Collectively the total energy consumption consumed from the measured areas on the 5 farms was 390,620kWh at an annual cost of $104,111, resulting in emissions of 316 tonnes of CO_2-*e*.

Opportunities

The main opportunities identified on the Grain farms and Feedlots 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)- Cooling upgrades, condenser motors with VSD, ventilation fans and heating upgrades.
- **Lighting and General**- Replacement and retrofitting of lights with LEDs, infrastructure and general changes.
- **Solar and Batteries**- Grid connect 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	6	52,009	11,404	107,000	11	42
Lighting and General	2	8,557	705	18,794	33	7
Solar and Batteries	1	7,053	775	15,000	19	6
Solar Systems	7	107,405	28,225	120,990	19	87
Total	16	175,020	41,109	261,784	16.8	142
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.

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Table 1 highlights that total energy savings of 175,020kWh were discovered from the audit process.

Including production benefits, a saving of $41,109 and estimated 142 tonnes of CO_2-e could be realised per annum. At a capital cost of $261,784 the average payback was 116.8 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)	390,620	215,600	44
Energy Costs ($)	104,111	63,002	39
Emissions (CO_2-*e*)	316	174	44

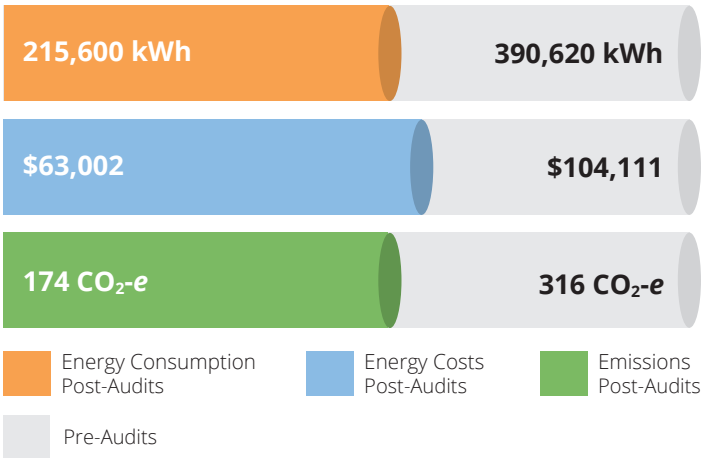
As installation of the recommendations is made within the industry, measurement and verification will be undertaken, and case studies will be updated to include the actual energy savings.

Energy Audits for your Business

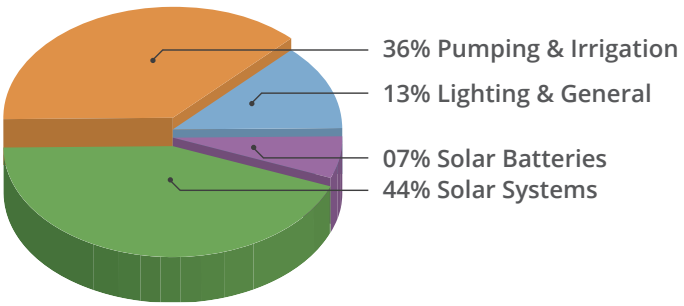
An energy audit is a great way for a business to identify the most effective way to cut costs, reduce emissions and boost productivity.

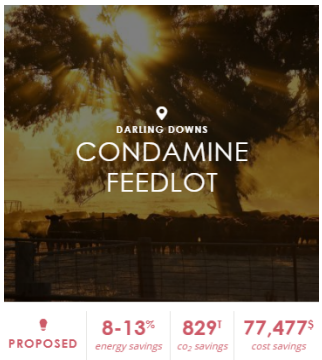
See other case studies including sector case studies and technology case studies at the website: www.qff.org.au/newsroom/case-studies/

Graph 1: Energy Savings Pre vs Post Audits



Graph 2: Energy Saving Opportunities in Grain and Feedlot





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