



POTENTIAL SOLUTION



AVERAGE ENERGY SAVINGS

36%

Energy Savers Plus Program

targets significant energy savings for

Queensland Other Farms



Key facts

Farm / Industry

Other

Product

Turf, Sheep and Pastures

Location

Queensland

Case study focus

Industry and Technology

Solution

Install solar systems and energy saving measures. Batteries worth considering on a Single Wire Earth Return line

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 10 Queensland turf, sheep and pasture farms.

Collectively the total energy consumption consumed from the measured areas on the 10 farms was 699,019kWh, at an annual cost of \$185,317, resulting in emissions of 566 tonnes of CO₂-e.

Opportunities

The main opportunities identified on these other farms 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).
- **Lighting and General**- Replacement and retrofitting of lights with LEDs, infrastructure and general changes.
- **Solar and Batteries**.
- **Gas**- Solar hot water, insulation and general heating.
- **Solar Systems**- Ranging in size from 5-100kW systems.

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	13	56,408	40,712	152,664	4.7	46
HVAC	3	4,356	986	7,850	5.89	4
Lighting and General	4	7,631	3,201	24,830	7	6
Solar Batteries	2	27,906	7,426	60,695	8.8	23
Solar Systems	11	156,551	91,094	260,571	6.5	126
Total	33	252,852	143,419	506,610	5.1	205
Total Recommendations	665	7,459,015	2,817,342	12,784,670	6.85	6,042

Table 1 highlights that total energy savings of 252,852kWh were discovered from the audit process.

Including production benefits, a saving of \$143,419 and estimated 205 tonnes of CO₂-e could be realised per annum. At a capital cost of \$506,610 the average payback was 5.1 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)	699,019	446,167	36
Energy Costs (\$)	185,317	41,898	77
Emissions (CO ₂ -e)	566	316	36

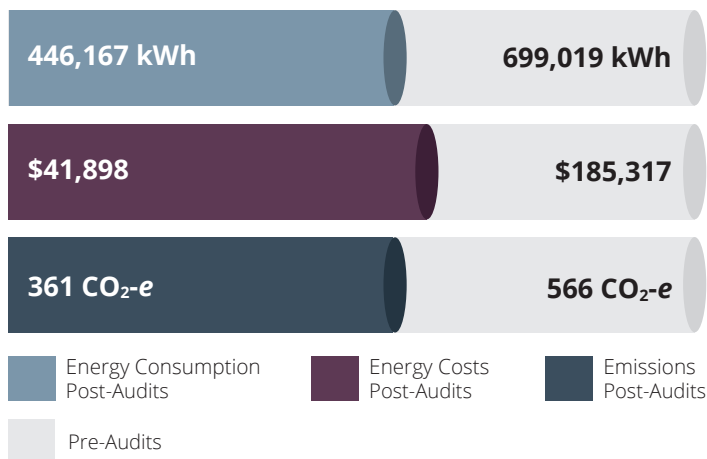
As installation of the recommendations is made within the industry, measurement and verification will be undertaken, and case studies will be updated to include the actual energy savings.

Energy Audits for your Business

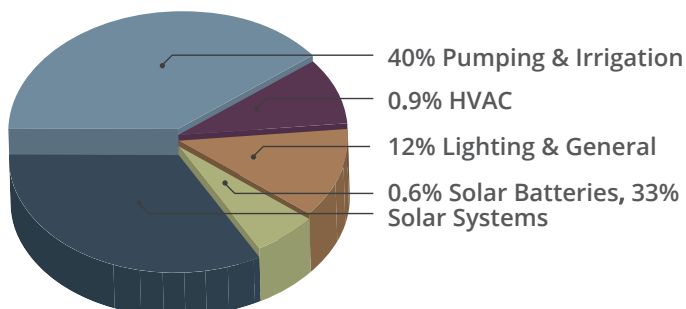
An energy audit is a great way for a business to identify the most effective way to cut costs, reduce emissions and boost productivity.

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

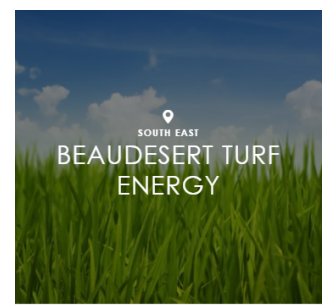
Graph 1: Energy Savings Pre vs Post Audits



Graph 2: Energy Saving Opportunities in other.



PROPOSED 49% energy savings 69t CO₂ savings 19,890\$ cost savings



PROPOSED 24% energy savings 120t CO₂ savings 41,437\$ cost savings