

POTENTIAL SOLUTION



AVERAGE ENERGY SAVINGS



## Energy Savers Program

*targets significant energy savings for*

## Queensland- All Farms

### Key facts

#### Farm / Industry

All

#### Product

All

#### Location

Queensland

#### Case study focus

ESPPE Project

#### Solution

Implement audit recommendations to reduce energy consumption and costs on farm.

### 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 all 180 Queensland farms in the Energy Savers program.

Collectively the total energy consumption consumed from the measured areas on the 180 farms was 18,666,737kWh, at an annual cost of \$4,187,148, resulting in emissions of 15,120 tonnes of CO<sub>2</sub>-e.

### Opportunities

The main opportunities identified on all the farms included:

- **Pumping and Irrigation**- Variable Speed Drive installation, pump replacements and maintenance, and changes to irrigation design
- **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 <sub>2</sub> -e)
Solar Systems	136	2,646,573	844,687	3,711,130	5.9	2,144
Pumping and Irrigation Upgrades	270	3,022,388	1,431,252	6,213,637	8.6	2,448
HVAC	106	823,916	255,735	1,602,001	6.8	667
Lighting and General	150	616,037	246,221	1,010,939	5.1	499
Solar and Batteries	6	49,265	22,947	156,363	10	40
Gas	3	300,836	46,500	90,600	1.3	244
<b>Total Recommendations</b>	<b>665</b>	<b>7,459,015</b>	<b>2,817,342</b>	<b>12,784,670</b>	<b>6.85</b>	<b>6,042</b>

Note: The table does not include a production benefit of \$13825 and potential tariff savings of roughly \$213,165 that attribute to the overall cost savings

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 7,459,015kWh, including gas were discovered from the audit process.

Including production benefits, a reduction of \$3,044,332 and an estimated 6,042 tonnes of CO<sub>2</sub>-e could be realised per annum. At a capital cost of \$12,784,670 the average payback was roughly 6.85 years.

Additional value adding from the energy audits showed how an increase in water delivery, and in some cases energy consumption, could lead to a potential increase in 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)	18,666,737	11,207,722	40
Energy Costs (\$)	4,187,148	1,142,816	72
Emissions (CO <sub>2</sub> -e)	15,120	9,078	40

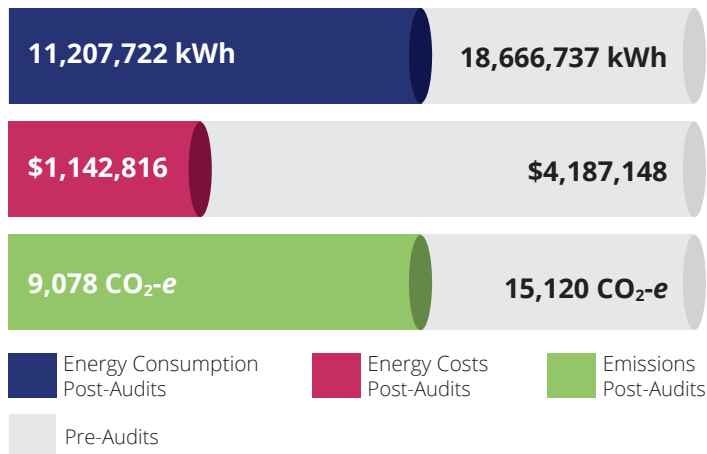
As installation of the recommendations is made within the industry, measurement and verification will be undertaken, and case studies will be updated to include the actual energy savings.

## Energy Audits for your Business

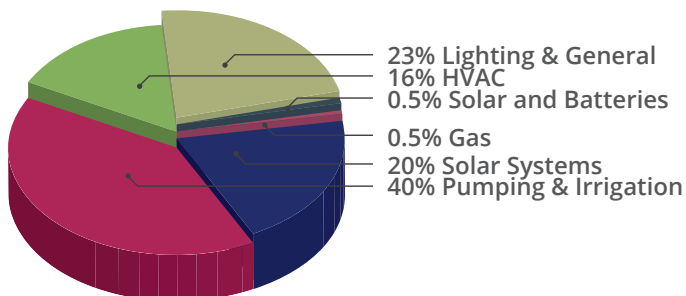
An energy audit is a great way for a business to identify the most effective way to cut costs, reduce emissions and boost productivity.

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

**Graph 1: Energy Savings Pre vs Post Audits**



**Graph 2: Energy Saving Opportunities in cotton**



**WIDE BAY BURNETT**  
GYMPIE PLANTATION FOREST

**PROPOSED** | 39% energy savings | 62.5<sup>t</sup> CO<sub>2</sub> savings | 24,333<sup>\$</sup> cost savings

**SOUTH EAST**  
GOLD COAST TIGER PRAWNS

**IMPLEMENTED** | 19% energy savings | 243.2<sup>t</sup> CO<sub>2</sub> savings | 40,800<sup>\$</sup> cost savings



**Case studies**

To see how other agriculture businesses are saving energy and costs, go to [www.qff.org.au/energysavers](http://www.qff.org.au/energysavers)