

# Energy Savers Plus Program

*targets significant energy savings for*

## Queensland Horticulture Farms

POTENTIAL SOLUTION



AVERAGE ENERGY SAVINGS

38%

### Key facts

#### Farm / Industry

Horticulture

#### Product

Fruit, Vegetables, Wine and Grapes

#### Location

Queensland

#### Case study focus

Industry and Technology

#### Solution

Install new pumping and irrigation upgrades, solar systems, batteries, LED lighting and make heating and general efficiency changes.

## 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 41 Queensland Horticulture farms.

Collectively the total energy consumption consumed from the measured areas on the 41 farms was 4,619,701kWh at an annual cost of \$1,002,647, resulting in emissions of 3,742tonnes of CO<sub>2</sub>-e per annum

## Opportunities

The main opportunities identified on Horticulture farms include:

- **Pumping and Irrigation Upgrades**- 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 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 <sub>2</sub> -e)
Pumping and Irrigation Upgrades	52	608,113	202,497	1,802,342	19	493
HVAC	19	177,513	49,194	487,032	9	144
Lighting and General	30	113,839	49,194	487,032	9	92
Solar Systems	34	888,019	239,874	1,353,324	6	719
<b>Total</b>	134	1,787,484	526,361	2,953,682	10.2	1,448
<b>Total Recommendations</b>	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 1,787,484kWh were discovered from the audit process.

Including production benefits a saving of \$526,361 and estimated 1,448 tonnes of CO<sub>2</sub>-e could be realised per annum. At a capital cost of \$2,953,682 the average payback was 10.2 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)	4,619,701	2,832,217	38
Energy Costs (\$)	1,002,647	476,286	52
Emissions (CO <sub>2</sub> -e)	3,742	2,294	38

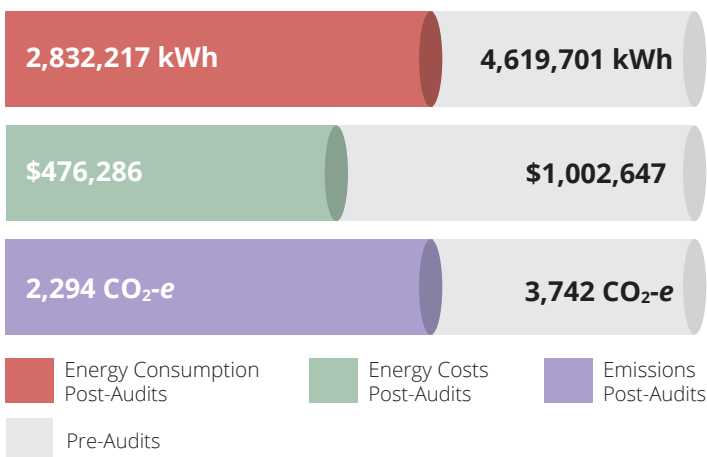
As installation of the recommendations is made within the industry, measurement and verification will be undertaken, and case studies will be updated to include the actual energy savings.

## Energy Audits for your Business

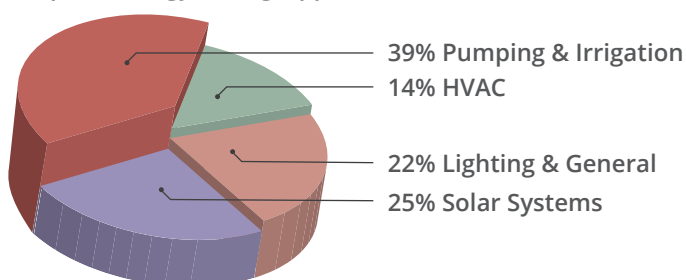
An energy audit is a great way for a business to identify the most effective way to cut costs, reduce emissions and boost productivity.

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/)

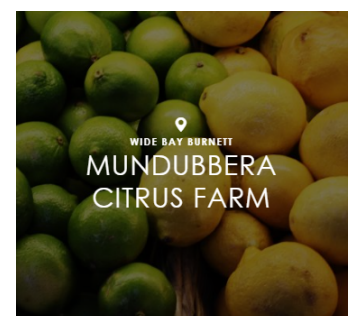
Graph 1: Energy Savings Pre vs Post Audits



Graph 2: Energy Saving Opportunities in horticulture



**PROPOSED** 10% energy savings 79t CO<sub>2</sub> savings 32,151\$ cost savings



**IMPLEMENTED** 7% energy savings 85.3t CO<sub>2</sub> savings 37,000\$ cost savings