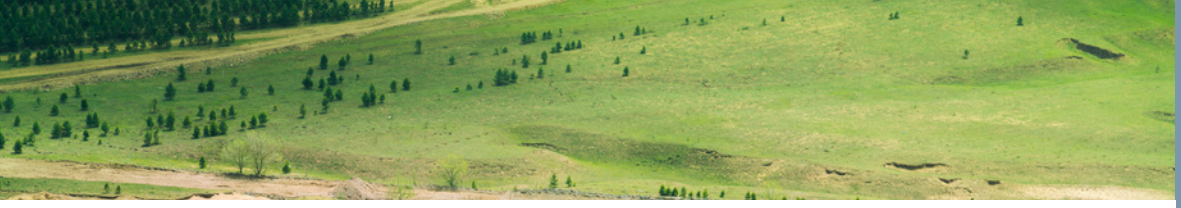

# Energy Savers Plus Program

*targets significant energy savings for*

## Queensland Other Farms

POTENTIAL SOLUTION

AVERAGE ENERGY SAVINGS 36%

## 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 (CO2-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 |


The Energy Savers Plus Program Extension was funded by the Queensland Department of Natural Resources, Mines and Energy.


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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.**

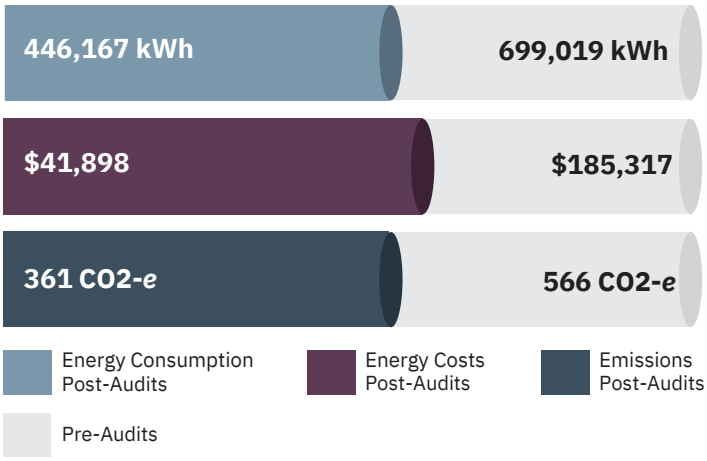
| Metric | Pre-Audits | Post-Audits | %Reduction |
|---|---|---|---|
| Energy Consumption (kWh) | 699,019 | 446,167 | 36 |
| Energy Costs ($) | 185,317 | 41,898 | 77 |
| Emissions (CO2-e) | 566 | 316 | 36 |

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.

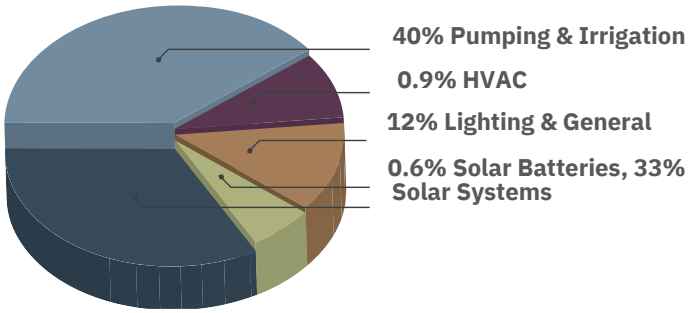
## Energy Audits for your Business

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

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




**Graph 2: Energy Saving Opportunities in other.**




**This case study was originally developed in 2021 as part of the Queensland Government funded Energy Savers Plus Program Extension, delivered by the Queensland Farmers' Federation.**