

# Energy Savers Plus Program

*targets significant energy savings for*

## Queensland Cane Farms

POTENTIAL SOLUTION



AVERAGE ENERGY SAVINGS



### Key facts

#### Farm / Industry

Sugarcane

#### Product

Sugar Cane

#### Location

Queensland

#### Case study focus

Industry and Technology

#### Solution

Install solar systems, pumping and irrigation upgrades and new LED lighting

### 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 52 Queensland Sugarcane farms taking part in the Energy Savers Plus Extension Program.

Collectively the total energy consumption consumed from the measured areas on the 52 farms was 5,131,314 kWh at an annual cost of \$1,384,169 resulting in emissions of 4,156 tonnes of CO<sub>2</sub>-e.

### Opportunities

The main opportunities identified on Cane farms include:

- Pumping and Irrigation**- Savings from Variable Speed Drive installation, pump replacements and maintenance and changes to irrigation design and automation.
- Lighting and General**- Replacement and retrofitting of lights with LEDs along with infrastructure and general changes.
- Solar Systems**- Ranging in size from 5-100kW systems.

**Table 1. Technology Recommendations and Savings in the Cane Industry.**

Recommendation	Total	Energy Savings (kWh)	Cost Savings (\$)	Capital Cost (\$)	Average Payback (Years)	Emission Reduction (CO <sub>2</sub> -e)
Pumping and Irrigation Upgrades	126	1,694,152	797,126	3,304,497	5.2	1,372
Lighting and General	33	267,287	134,945	420,123	4.2	217
Solar Systems	27	605,131	158,546	583,142	3.8	490
<b>Total Cane</b>	<b>186</b>	<b>2,566,570</b>	<b>1,090,617</b>	<b>4,307,762</b>	<b>4.4</b>	<b>2,079</b>
<b>Total Recommendations (All Sectors)</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>

Table 1 highlights that total energy savings of 2,566,570kWh were identified in the audits.

Cost savings of \$1,090,617 and an estimated 2,079 tonnes of CO2-e could be removed per annum. At a capital cost of \$4,307,762 the average payback was 4.4 years.

Additional value adding from the energy audits showed how an increase in water delivery, and in some cases energy consumption, shows a potential increase in production and profit with a reduction in energy consumed per unit of output.

**Table 2. Pre and Post Audit Metrics.**

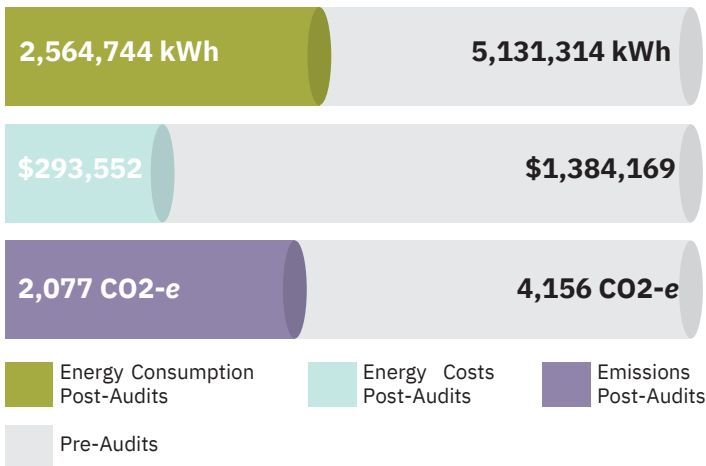
Metric	Pre-Audits	Post-Audits	%Reduction
Energy Consumption (kWh)	5,131,314	2,564,744	50
Energy Costs (\$)	1,384,169	293,552	78
Emissions (CO2-e)	4,156	2,077	50

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.

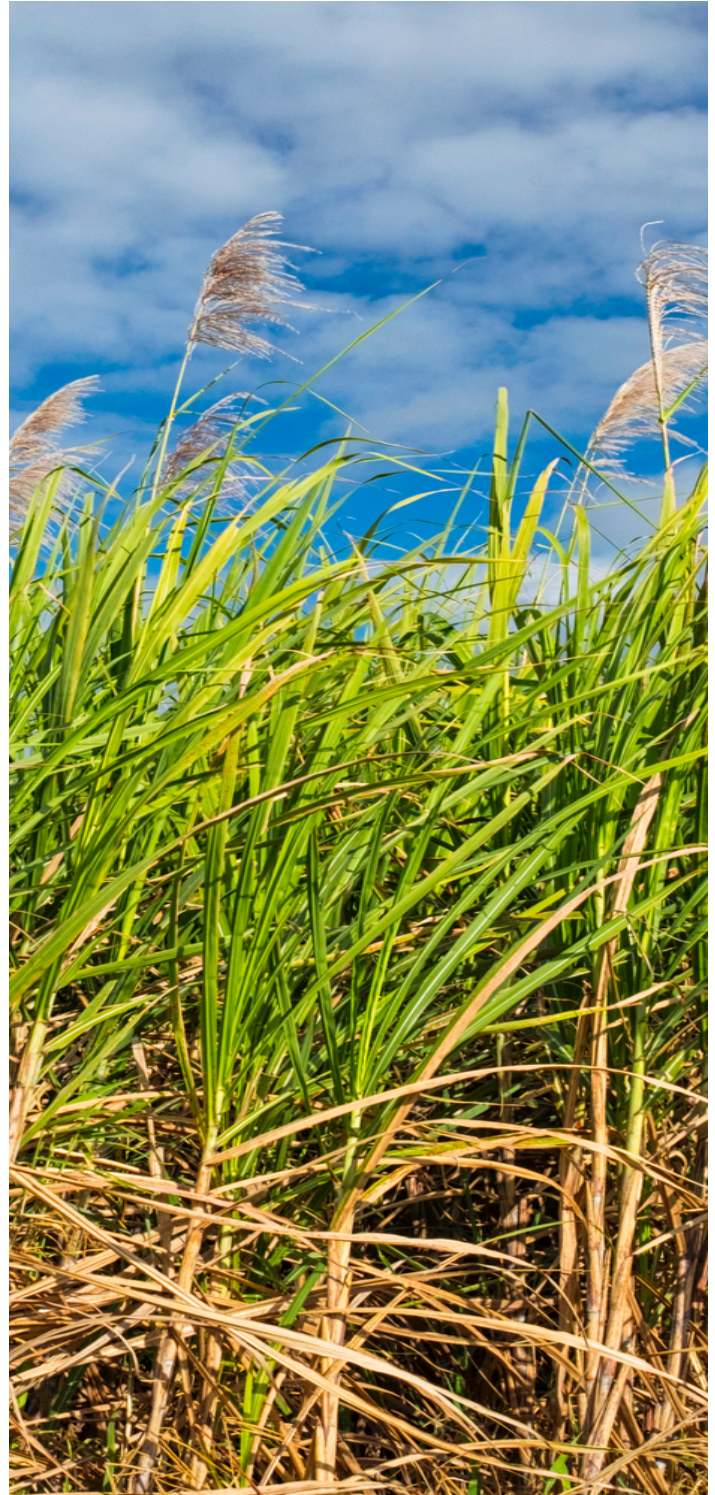
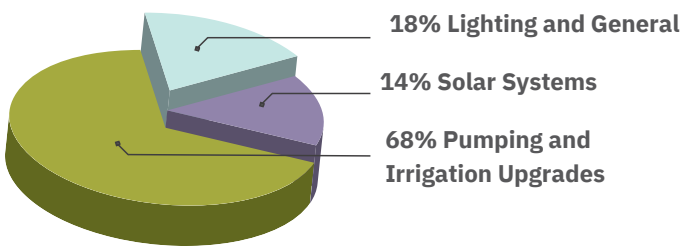
## Energy Audits for your Business

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 Cane**



**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.**