



# Energy Savers Plus Program

targets significant energy savings for

## Queensland Poultry Farms

POTENTIAL SOLUTION



AVERAGE ENERGY SAVINGS



### Key facts

#### Farm / Industry

Poultry

#### Product

Chicken Meat

#### Location

Queensland

#### Case study focus

Industry and Technology

#### Solution

Install solar systems, upgrade ventilation fans and improve power factor.

## 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 two Poultry farms.

Collectively the total energy consumption consumed from the two farms was 599,314kWh at an annual cost of \$ 125,283 resulting in emissions of 485 tonnes of CO<sub>2</sub>-e per annum.

## Opportunities

The main opportunities identified on these poultry farms include:

- 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, including power factor correction.
- Solar Systems**- Ranging in size from 5-100kW.
- Solar and Batteries**- One large scale system was recommended and results shown in a separate case study.

**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	1	45,990	8,483	45,900	5.4	37
HVAC	5	172,125	42,725	495,600	9	140
Lighting and General	1	6,717	2,015	24,569	12	5
<b>Total</b>	<b>7</b>	<b>224,832</b>	<b>53,223</b>	<b>566,069</b>	<b>8.8</b>	<b>182</b>
<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>

Table 1 highlights that total energy savings of 224,832kWh were discovered from the audit process.

Including production benefits, a saving of \$53,233 and estimated 182 tonnes of CO<sub>2</sub>-e could be realised per annum. At a capital cost of \$566,069 the average payback was 8.8 years.

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

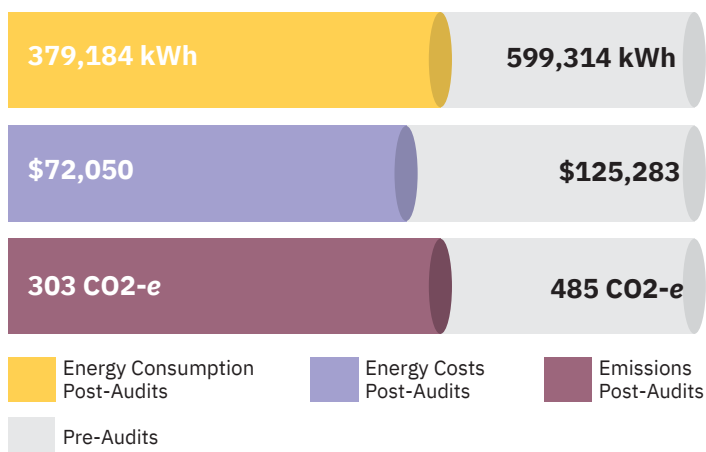
Metric	Pre-Audits	Post-Audits	Reduction (%)
Energy Consumption (kWh)	599,314	379,184	37
Energy Costs (\$)	125,283	72,050	42
Emissions (CO <sub>2</sub> -e)	485	303	37

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.

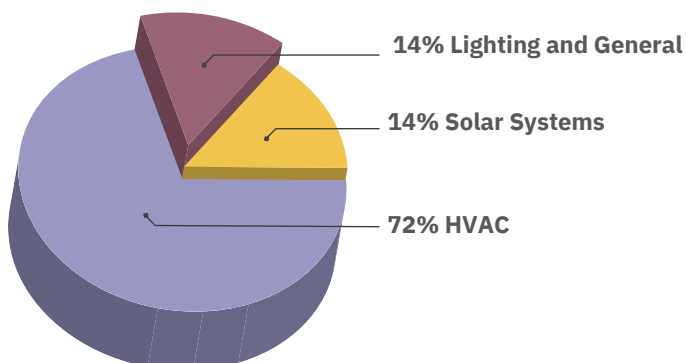
## Energy Audits for your Business

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 poultry**



**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.**