

Irrigators Energy Savers Program

targets significant energy savings for a
Queensland horticulture farm

**PROPOSED
SOLUTION**

Potential
energy
savings



Key facts

Farm / Industry

Horticulture

Product

Vegetables

Location

Gatton

Irrigation

Drip and micro irrigation

Pumps

Centrifugal

Solution

Proposed:
Replace pump and motor

Farm profile

The farm is located in Gatton and comprises a number of lots used to grow different vegetables throughout the year. The irrigation method is a solid set ring main with sprinklers and is supplied by two pumps.

Irrigation continues year round with the irrigation time dependent on the season and type of vegetables being cultivated.

Current irrigation

The irrigation system comprises:

- Two centrifugal pumps (55kW and 15kW) supply water from the main on-site dam to the irrigation ring main. The main dam is at the highest point on site.
- Several bore pumps are used on site but these were not assessed as part of the audit.

Action

An energy audit of the pumping systems evaluated:

- replacing the pumps and motors.

Results

Of the energy saving opportunities evaluated, one initiative was identified with potential savings of 20% and a payback period of 7.2 years (approx).

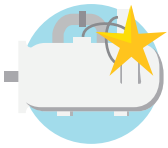
The energy audit report included a recommendation to replace the 55kW pump with a more energy efficient pump and motor.

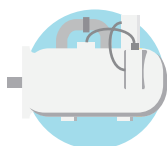
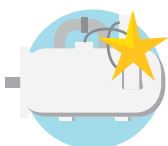
The Irrigators Energy Savers Program was funded by the Queensland Department of Agriculture and Fisheries



Recommendations

The energy audit recommendations are summarised below:

Solution	 	
	Pump and motor replacement	
Est. energy savings (kWh/annum)	8,350	
Est. operating cost saving	\$2,088	
Est. cost to implement	\$15,000	
Payback period (years)	7.2	
Est. demand reduction (kW)	11	
Est. energy savings	20%	

Forecast savings in pump operating costs			
	Existing system	Upgraded system	Reduction in operating costs
Annual pump operating cost	\$66,026	\$63,938	-
Cost to implement	-	\$15,000	-
Operating costs for first 8 years	\$528,208	\$526,504	\$1,70
Annual pump operating cost	\$66,026	\$63,938	4
Total pumping costs for 10 years	\$660,260	\$654,380	\$2,08 \$5,880 8

Farmer feedback

The farmer is investigating pricing to implement the audit findings and achieve the energy savings identified in the audit report.

This case study was originally developed during 2017-18 as part of the Queensland Government funded Irrigators Energy Savers Program, delivered by the Queensland Farmers' Federation.