

Energy Savers Plus Program

targets significant energy savings for a
Queensland vineyard

**PROPOSED
SOLUTION** 

Potential
energy
savings

2%

Key facts

Farm / Industry

Winery

Location

Stanthorpe

Irrigation

Drip and micro irrigation

Pumps

Centrifugal

Solution

Proposed:

Disconnect unused
pumps and thermal
insulation of tanks

Farm profile

The wine estate, near Stanthorpe, covers approximately 30 hectares, most of which is used for vineyards, and produces wines from a range of grape varieties.

Most of the energy consumption on-site is used in the main manufacturing shed where the wine is produced using a variety of pumps, refrigeration units and air compressors. Energy is also used for irrigation pumping as well as other amenities including a restaurant and residence.

Current energy demand

The site energy consumption consists of:

- cold rooms with associated refrigeration equipment
- a grape crusher
- portable transfer pumps
- air compressors
- brine chillers for fermenting tank jackets.

- increasing size of existing solar photovoltaic installation
- cold room door seals.

Results

Of the energy-saving opportunities evaluated, two initiatives were identified energy savings on-site with a combined payback period of 3.1 years (approx).

The energy audit recommendations included initiatives to disconnect unused brine pumps in the manufacturing facility to reduce the volume of brine in the system that requires refrigeration as well as providing thermal insulation to the fermentation tanks.

The audit report also included a recommendation to review the electricity tariff arrangement on-site to realise potential savings of \$2,561 per annum.

Action

An audit of site energy consumption evaluated:



- disconnection of unused brine pumps
- installation of thermal insulation of tanks
- variable speed controls
- compressor replacement
- lighting control

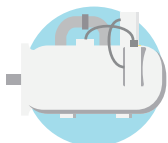
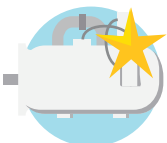

The Energy Savers Plus Program was funded by the Queensland Department of Energy and Water Supply



Recommendations

The energy audit recommendations are summarised below:

Solution		
	Disconnect unused brine pumps	Thermal insulation of tanks
Est. energy savings (kWh/annum)	553	991
Est. operating cost saving	\$124	\$223
Est. cost to implement	\$352	\$72
Payback period (years)	2.8	0.32
Est. demand reduction (kW)	-	-
Est. energy savings	1%	1%

Forecast savings in pump operating costs			
	Existing system	Upgraded system	Reduction in operating costs
Annual operating cost	\$38,800	\$38,453	-
Cost to implement	-	\$1,072	-
Operating costs for first 4 years	\$155,200	\$154,884	\$316
Annual operating cost for years 5 to 10	\$38,800	\$38,453	\$347
Total electricity costs for 10 years	\$388,000	\$385,602	\$2,398

Farmer feedback

You can focus your decision making when you understand your business. The energy audit has provided us with an indepth understanding of our energy usage, the good and the bad. We now have a defined list of 'initiatives' which we can tackle, one at a time, as we are able to fund them.

This case study was originally developed in 2016 as part of the Queensland Government funded Energy Savers Plus Program, delivered by the Queensland Farmers' Federation.