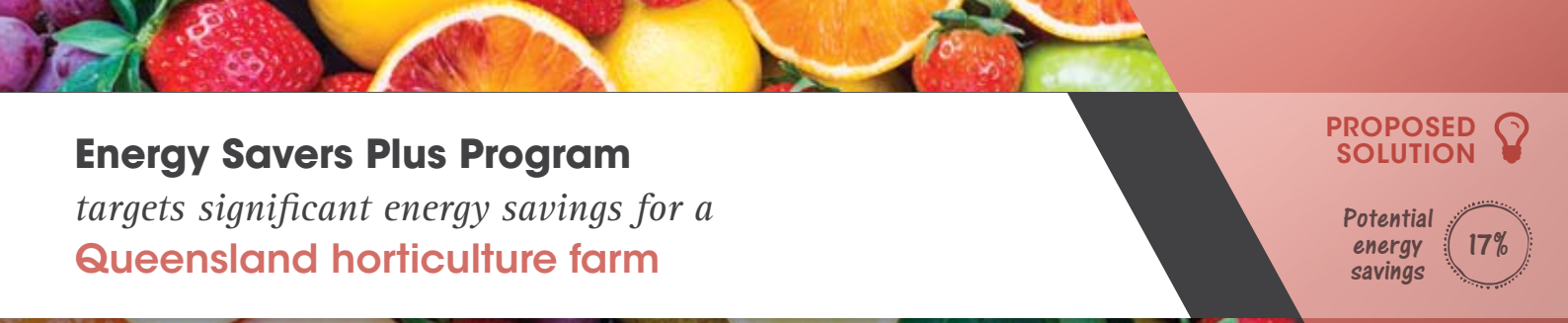


Energy Savers Plus Program

targets significant energy savings for a

Queensland horticulture farm

PROPOSED SOLUTION

Potential energy savings 17%

Key facts

Farm / Industry

Horticulture

Product

Button mushrooms

Location

Townsville

Irrigation

Drip and micro irrigation

Solution

Proposed:
Improvements to growing room and upgraded HVAC system

Farm profile

The mushroom farm, located near Townsville in North Queensland, currently has twelve small growing rooms with a total growing shelf area of 960m^2. The growing rooms have 6 cycles per year with each cycle taking mushrooms from spawn to full size and fresh for delivery to supermarkets.

The farm's main energy consumption is the air conditioning plant for environmental control. Lighting and machinery power demand is negligible and remain turned off for the majority of run hours.

Current energy demand

The site energy consumption consists of:

- Air conditioning plant that consumes most of the site's 224,000kWh per annum. The atmosphere inside each of the growing rooms is carefully controlled to provide for mushroom growth.
- Temperature is varied between 17-24°C depending on the stage of growth, with relative humidity varying between 88-95% and CO_2 controlled between 500-4,000ppm.

Action

An audit of site energy consumption evaluated:

- growing room layout changes
- environmental control system redesign
- air conditioning system upgrade.

Results

Of the energy-saving opportunities evaluated, two initiatives were identified with potential energy savings of 17%.

The energy audit recommendations included an initiative to change the growing room layout to improve use of space.

The change in growing room layout would need to be combined with an initiative for a new air conditioning system with an inverter-driven chilled water plant. The new system would automatically control temperature, humidity, CO_2 levels and pressure for the new growing rooms for optimal mushroom production with energy cost savings of $9,000 or 13% per annum.

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

QFF

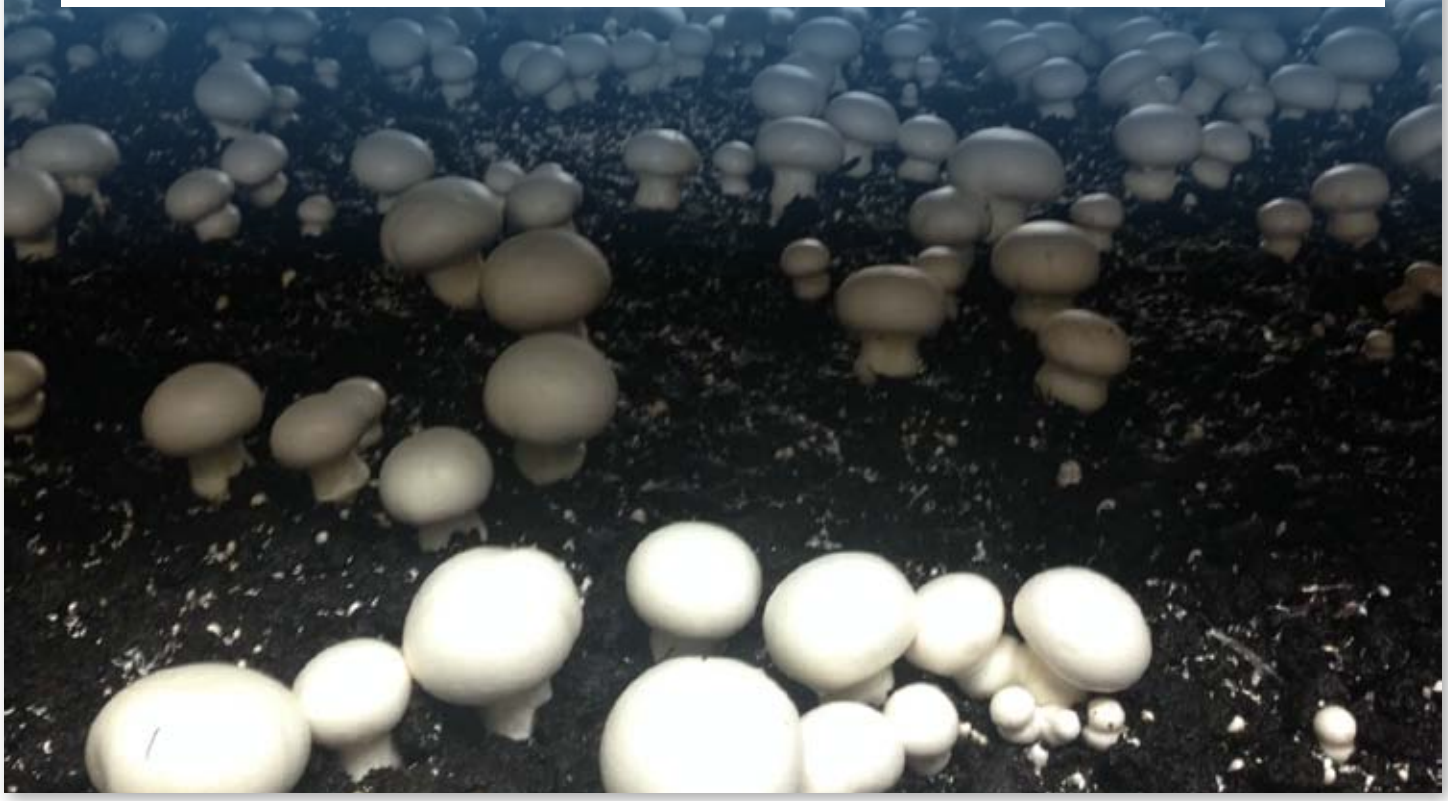
ERGON ENERGY NETWORK

Queensland Government

Recommendations

The energy audit recommendations are summarised below:

Solution	Improvements to growing room and upgrade to HVAC system
Est. energy savings (kWh/annum)	37,334
Est. operating cost saving	$9,000
Est. demand reduction (kW)	23



Farmer feedback

The program has been very good in investigating more energy efficient equipment. We believe it would be a positive upgrade investment for the $560,000 to upgrade the Air Climate equipment to replace the existing equipment, however we do not have the ability to proceed at this time.

Case studies

To see how other agriculture businesses are saving energy and costs, go to **www.qff.org.au/energysavers**