

The Large Energy User Electrification Support program

Hazeldenes Chicken Farm explores cost, emissions reductions through electrification

Hazeldenes Chicken Farm, one of Australia's largest fully integrated poultry processors, has identified new ways to reduce emissions and cut energy bills at its Lockwood facility, southwest of Bendigo.

With support from the Victorian Government's Large Energy User Electrification Support program, Hazeldenes Chicken Farm explored how replacing gas systems with electric technologies could improve efficiency and profitability.

The \$1.6 million initiative helps commercial and industrial gas users across Victoria assess and adopt electrification solutions that reduce energy use, costs and emissions.

Using a \$49,000 grant provided by the program, Hazeldenes Chicken Farm undertook a feasibility study. The study compared replacing gas boilers with electric powered fluid-to-fluid and air-to-fluid heat pumps; using hot water from the pumps to electrify heating, ventilation and air conditioning (HVAC), and replacing gas-fired laundry dryers with electric ones.

The fluid-to-fluid heat pump was identified as the most viable choice for financial savings and gas reductions.

The program outlined that:

- The fluid-to-fluid heat pump can supply 85°C water to the farm's primary and secondary processing units, utilising waste heat from the ammonia refrigeration system to improve efficiency;
- Gas and thermal sub-metering to be upgraded to improve accuracy in energy savings calculations and support incentive claims;
- The heat pump must include a thermal storage tank to mitigate fluctuations in demand and prevent the pump from short-cycling by not completing its heating or cooling duration; and,
- Replacing gas-fired laundry dryers with electric options could provide further savings as Victoria's grid switches to renewable energy.

The fluid-to-fluid heat pump upgrade offers a quick payback period over six years with a net present value of **\$65,614** and could result in:

28,570 GJ per year in reduced gas consumption.

A **37 per cent** reduction in the site's annual gas consumption.

VEU upgrades potentially worth **\$742,140** in financial incentives.

If pursued, the fluid-to-fluid heat pump could generate 8,246 Victorian Energy Efficiency Certificates (VEECs) for Hazeldenes Chicken Farm.

Building Victoria's renewable energy future

The Large Energy User Electrification Support program forms part of the Victorian Energy Upgrades (VEU) program, the flagship program which helps Victorians upgrade their homes and businesses with energy-efficient products and services by offering discounts and rebates.

Hazeldenes Chicken Farm was one of 36 facilities which participated in the program. Grants of up to \$60,000 per facility were available to support innovative electrification feasibility assessments of commercial and industrial businesses that use between 10 to 100 terajoules of gas per annum.

These feasibility assessments provided a business case for bespoke energy efficiency upgrades through the VEU program's Project Based Activity (PBA) method, such as upgrading hot water boilers, furnaces, ovens and dryers, by tailoring the best way forward to transition from gas to electricity.

Homes and businesses which become more energy-efficient through the VEU program allow accredited providers to create VEECs. Each certificate represents one tonne of greenhouse gas prevented from entering our atmosphere.

Approved businesses create certificates for every upgrade they perform. Energy retailers are required to purchase certificates each year corresponding to their share of energy they sell and to meet annual emissions targets set by the Victorian Government. Energy savings achieved in the program benefit all energy consumers as they reduce the need for upgrades to energy infrastructure.

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For more information on switching to electrification see the VEU page at www.energy.vic.gov.au/victorian-energy-upgrades/about

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