

Lion Landcare Grants 2016/2017

Project Case Study

Recipient:	Woodbine Holdings P/L
Project Name:	Saving energy and oil consumption with the installation of a new variable speed drive Blower Vacuum pump
Location:	Goulburn Valley, Victoria
Funding Amount:	\$11,000
Objective:	To be more energy efficient and sustainable in their dairy shed

Background



The Woodbine dairy is a family run operation in Victoria's Goulburn Valley. Operating the property for over 80 years, the Ryan brothers and their partners run 850 milking cows on 347 hectares, which produce seven-million litres of milk each year.

Over the last 15 years, the family has focussed on upgrading the irrigation system to improve the productivity and sustainability of the pastures. The majority of the property is now under automatic irrigation that allows them to water where, when and how they need to, in order to maximise yield per mega litre of water applied.

Turning their focus on the dairy shed, the Ryans looked for a way to improve energy usage in the dairy machinery. The original system with its two 10-year old oil operated vacuum pumps operate the milk harvesting equipment by creating a vacuum that draws the milk through it. This system is highly inefficient as the motor used to drive the pumps runs at a consistently high speed, regardless of the number of cows being milked. It's estimated that 80 percent of the farm's energy usage sits with operating the two pumps.

Not only do the pumps require a lot of energy to run, Sandra Ryan, who also manages the farm, said they had to be run during peak times when electricity costs were the highest.

Replacing the old pumps with a system that was more efficient was a vital next step in the implementation of a sustainable operation both environmentally and economically.

Lion Dairy Pride Landcare Grants

Sandra said the family explored alternatives and came across a variable speed drive (VSD) unit that unlike the old pumps, adjusts power consumption to meet demand during milking. As cows are milked and the cups fall away from the udder it slows down the speed it operates using less and less electricity.

In addition, only one VSD was needed to replace the two old pumps, another energy saving measure. Unlike the oil operated pumps that created significant waste oil - an environmental and contamination risk - the VDS did not create waste.

The VSD also solved another issue in the cow shed by making it a quieter and more comfortable place to work. The old pumps created a significant amount of noise that meant staff had to yell to hear one another creating an environment that was stressful for the cows and unpleasant to work in.

Once they found the grant online, Sandra said the grant application process made the family examine their energy usage over time.

Outcome

Since replacing the pumps seven months ago the Ryans estimate they have already cut energy consumption by 10 percent, when compared to the seven months prior to installation. They expect to see further savings as they factor in an entire year.

On top of the reduction in power use, the VSD requires less maintenance than the older pumps and does not require the same amount of oil. There was some additional cost-savings in reduced oil and maintenance cost, as well as a significant environmental benefit as the older pumps blew out 200 litres waste oil annually.

As for the noise, Sandra describes a quieter and calmer dairy shed that is a really big tick in justifying the upgrade, which benefits both employees and the herd.

