



Energy



Effluent power

480kwh per day from
methane recovery

Methane as an energy source on dairy farms has the potential to significantly reduce electricity use and costs whilst also having significant environmental benefits

GREAT SOUTH



Methane Recovery

The potential of converting methane to energy, and its ability to significantly reduce electricity costs and environmental impact, was identified in the 2011 Southland Regional Energy Strategy.

To explore this potential, NIWA (the National Institute of Water and Atmospheric Research) presented on methane recovery at the 2012 Regional Energy Conference and Workshop in 2012. Later in 2012, a methane monitoring programme was established by NIWA on a Dacre farm.

The monitoring ended in September 2014 and after producing a larger amount of methane than what national models had forecast, planning commenced in 2015 to build and commission a fully integrated methane to electricity plant at Isla Bank.

Following a successful pilot period the Dairy Farm Methane Recovery Project was officially launched to the public in April 2017. The project showed how methane recovery can significantly reduce costs, harmful greenhouse gases and odour on farms.

The Methane Recovery project has shown that by capturing effluent you can create electricity to power milking sheds, produce hot water and run electrical farming machines and tools whilst contributing to a significant reduction of methane and carbon emission.

Glenarlea Farm

Glenarlea Farm, a 330ha Fortuna Group dairy farm under the stewardship of David Dodunski, was the farm that piloted the methane to electricity project. As a result of this pilot the farm has been converting methane gas captured from the dairy effluent pond into electricity for the dairy shed since 2016.

The system of methane recovery used at Glenarlea Farm is fuelled by a 60kW generator which enables the farm to have sufficient gas for the system to operate for up to 15 hours per day.

Benefits of the system

- Reliable power supply for farm, less reliance on electricity supply and back-up generators - produce up to 480 kw of power
- Significant reduction of methane and carbon emission - avoidance of 19,320 of CO2 equivalent over the next 25 years
- Production of hot water to use for plant wash
- Reduction in farm's operating cost, increase of farm profitability and efficiency – the recovery system will eventually pay for itself
- Dramatically reduces effluent pond odour – a win for everyone
- Faster abortion of nutrients to soil from irrigation system, due to breakdown of organic matter in methane pond

The costs will vary depending on the effluent pond systems used. However, through the savings farmers will gain from being able to generate electricity themselves, the recovery system will cover its costs.



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