

Dairy Farm Solar Energy Solution

Oakey, Darling Downs, Queensland - SEBSS Case Study

1. Executive Summary & Background

In 2017, an active commercial dairy farm in Oakey, QLD, received notification from their electricity provider regarding an involuntary conversion to a high peak demand tariff after annual energy consumption exceeded 100 MWh. Operating continuous rotary milking parlours, milk chilling compressors, and water heaters during morning (4am-8am) and afternoon (3pm-6pm) windows, the farm faced an estimated \$6,500 annual bill hike.

2. The Engineering & Heat Recovery Solution

Innolec and SEBSS engineered a custom 30 kW solar inverter system paired with 40 kW of photovoltaic panels installed on the main dairy shed. The installation incorporated thermal heat exchanger recovery units that reuse heat generated during milk chilling to pre-heat wash water, neutralizing peak electrical demand spikes.

3. Verified Financial Impact & Performance

Following deployment in August 2018, maximum demand dropped from 52 kW to 35 kW. Average daily grid consumption dropped from 275 kWh down to 160 kWh. Total electricity expenses were nearly halved, delivering verified monthly savings of \$1,900 and achieving full capital investment payback in 27 months.