Case Study

Mt Lyall Dairies

Solar and energy storage powers carbon neutral dairy farm

energy renaissance

Farming the Sky

Mt Lyall Dairies located in Nyora, South Gippsland consumes 387MWh of energy per annum to milk 1350 dairy cows twice daily to produce about 10 million litres of milk. The dairy had originally relied on grid electricity and a 330kVa diesel generator to power the milking sessions in the afternoon.

The Journey

The Mt Lyall dairy operation was at risk of power outages and shortages, and vulnerable when it's essential to both milk the cows twice a day and then cool and regulate the temperature of the milk at all times.

Dairy farmers in Australia often struggle to manage their operating costs, with many dairy farmers paying up to $250,000 in electricity costs a year, an increase of over $100,000 since the start of the current energy crisis, according to Ash Salardini, the chief economist at the National Farmers' Federation. In the event of a power outage, dairy farms would not be able to milk their cows, and this would impact on their revenue and operations.

The Solution

Through the Victorian Government Business Recovery Energy Efficiency Fund, the Lancey Dairy Farm received a grant of over $880,000 to modernise its operations through Commpower Industrial, a community and commercial solar installer. Commpower has installed a 300kWp rooftop solar system using and a 750kWh Renaissance superStorage™ battery system provided by Energy Renaissance to achieve four key objectives;

- Eliminate the inefficient use of a 330kVa diesel generator required to power each afternoon milking session
- Significantly reduce the energy costs of the Dairy
- Provide stability to the operation of the Dairy throughout peak load times in the grid
- Become a world leader in the reduction of gHg emissions

Battery Storage

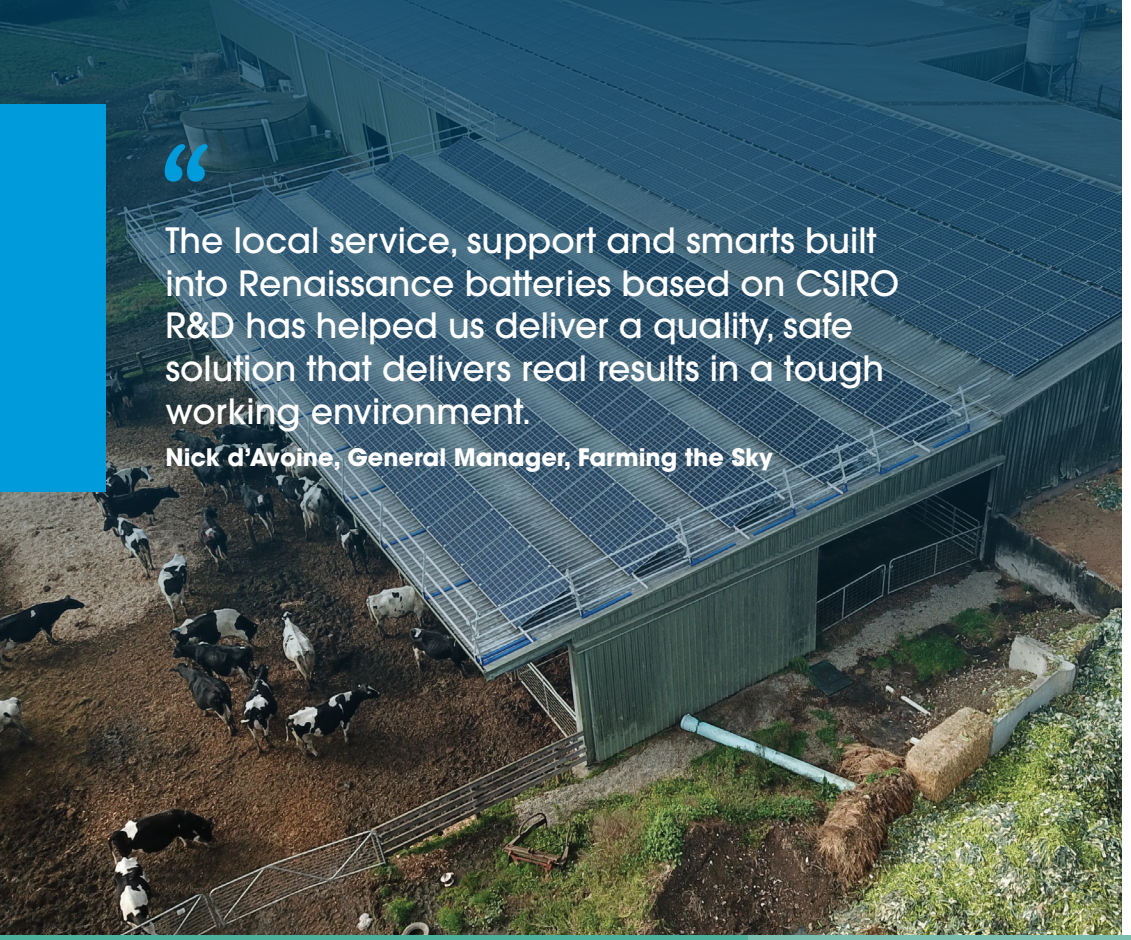
Utilising 7 x 107.52kWh superRack™ twin systems and cybersecure battery and energy management systems.
Total of 750kWh

Solar Power

Existing grid connected
5 x Sungrow SG50CX PV grid tied inverters with 300kWp of PV

Additional Features

PV now paralleled with 3 x Sungrow SG50HV battery inverters each with 2 x 2X's which are connected in parallel



> The local service, support and smarts built into Renaissance batteries based on CSIRO R&D has helped us deliver a quality, safe solution that delivers real results in a tough working environment.
>
> **Nick d'Avoine, General Manager, Farming the Sky**

Outcomes

With solar and batteries, the farm will be able to eliminate the use of its diesel generator and reduce its energy costs. The estimated annual energy savings for the dairy farm is close to $80,000 per year and this will reduce their greenhouse gas emissions by 535 tonnes per year.

The battery will provide stability to its operations by reducing the use of grid electricity and supporting the dairy shed's energy requirements during peak load times on the grid.

Generates 831MWh of energy annually

Saves 664,571 kg of CO_2 annually*

The equivalent of 5.5 million km of motorcycle travel^

Conclusion

By transitioning towards clean energy, the Mt Lyall Dairy Farm will become a global leader in the reduction of its greenhouse gas emissions and it is expected to be one of the world's largest carbon neutral dairy farms – setting a new showcase to inspire other Australian dairy farmers to make the transition towards clean energy.

*Based on average 800 kg CO2 emitted for each MWh of electricity generated from a black coal power station.
^Based on the average motorbike emitting 119.6g of CO2 per km, with one rider.

For more information

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