



Powering Australian Agriculture

Australia's Largest Milk Producer on the Limestone Coast, SA

Energy Renaissance, in partnership with agricultural specialist EPC Farming the Sky, has revolutionised the energy infrastructure for one of Australia's largest milk producers on the Limestone Coast, SA, across three key dairy farming sites. The project has successfully replaced traditional stand-alone diesel systems with renewable, off-grid power solutions, integrating Energy Renaissance's high-capacity superRack™ batteries, extensive solar arrays, and optimised, integrated generator backups.

energy
renaissance



The Journey

Faced with the dual challenges of unreliable grid infrastructure and the imperative to reduce greenhouse gas emissions, the client partnered with EPC Farming the Sky and sought a sustainable, cost-effective energy solution. Replacing diesel generators with battery storage represented a bold commitment to renewable energy and environmental stewardship. Choosing Energy Renaissance batteries for their solutions was pivotal for Farming the Sky due to ER's commitment to providing straightforward, safe, and locally supported energy solutions. Their approach integrates seamlessly with Farming the Sky's values and the client's operational needs, making them an ideal partner for the latest, cost effective renewable energy adoption in agriculture.

The Solution

Farming the Sky implemented a system of 3480 kWh Renaissance superRack™ batteries and 1924 kW of P.V. solar panels.



Battery Storage

50 x 69kWh indoor superRack™ systems with integrated safety, cybersecure battery management and energy management systems.

Total of 3,479 kWh



Solar Power

Equipped with 1,924.16kWp of ground-mounted panels and a Sinexcel solution combining automatic changeover switch for generator back up, AC/DC inverters, DC-DC converters and PV DC-DC converters.



Additional Features

Generator backup for charging batteries.

Total 1499 KVA



Outcomes

The project's success is evident in its environmental impact, operational cost reduction, automated irrigation and improved energy reliability. Beyond immediate benefits, the system's integration provides financial advantages through carbon credits, marking a significant advancement in sustainable agricultural practices.



Irrigation Pivot Diesel Replacement

Battery storage plays a crucial role in replacing diesel-operated irrigation systems, often used in areas where grid connection is not viable, but come with a high cost of fuel consumption and emissions. The transition to battery-backed solar power systems ensures continuous operation, leveraging stored solar energy to power central pivot irrigation systems during cloudy days or at night. Initial findings indicate significant fuel savings when converting diesel-powered irrigation to solar-powered systems, with an expected ROI in less than five years due to reduced fuel and maintenance costs.

Dairy Operation Resilience

In remote areas with unstable grid power, Energy Renaissance's battery solutions prove essential for maintaining uninterrupted dairy operations such as milking, refrigeration, and ventilation systems, especially during non-daylight hours. These solutions exemplify the simplicity and reliability of Energy Renaissance's technology, ensuring operations continue smoothly and efficiently, despite external power inconsistencies.

Cost Efficiencies

In the case of a single 200 kW solar PV and battery storage system upgraded irrigation infrastructure dramatically reduced annual energy costs by up to 75%, demonstrating the substantial savings and enhanced operational efficiencies achievable with Energy Renaissance's integrated solar and battery systems.

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Utilising Energy Renaissance's uniquely Australian batteries has enhanced the reliability of our customer's power supply, protecting crucial dairy operations against grid inconsistencies, rising diesel costs, and epitomising the potential of renewable energy in agricultural settings.

Nick d'Avoine,
Global Program Development, Farming the Sky



Conclusion

Implementing a large-scale integrated solar/storage/generator system powered by Renaissance SuperRack™ systems represents a pivotal shift towards renewable energy in the agricultural sector.

Energy Renaissance's principles of real simple, real safe and real Australian were exemplified in this initiative with the provision of straightforward, reliable, and locally supported energy solutions. This project not only demonstrates the practical and economic benefits of transitioning from fossil fuels but also highlights the strategic importance of innovative, locally developed energy solutions in fostering sustainability within the agricultural sector.

These systems offer reliable, cost-effective, and environmentally friendly energy solutions essential for powering high-demand processes in farming operations, particularly in regions afflicted by inconsistent grid services and affected by rising power and diesel costs.



**Generates 10,400MWh
of energy annually**



**8,320,322kg of CO₂
emissions abated annually***
**The carbon storage equivalent
of about 50,000 trees^**



**Projected ROI 11% resulting
in approximate savings of
\$180,000 annually**

*Based on average 800 kg CO₂ emitted for each MWh of electricity generated from a black coal power station.
^Based on the assumption that the average tree can store 167kg of CO₂ per year.



For more
information

email sales@energyrenaissance.com.au
or visit energyrenaissance.com.au

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