

Harnessing Solar Power and Battery Storage for Sustainable Dairy Farming

FranklinWH helps the farm significantly reduce operational costs



Challenge

A fourth-generation dairy farm with operations that are predominantly outside of daylight hours, making conventional solar solutions insufficient to meet energy needs. Additionally, the farm faced the challenge of widely fluctuating energy demands, particularly during peak milking times.

Solution

Add 70 kW new solar panels and a FranklinWH system of six aPower batteries, providing an enormous 81.6 kWh of energy storage to cover the farm's daily operation to gain energy independence. Six more batteries are on the way.

Result

- Expected electricity bills reduced by 75%
- Resilience against power outages
- Sustainable energy consumption



A Fourth-generation Dairy Farm Encounters Energy Challenge

Steve, a fourth-generation dairy farmer, operates a modernized dairy farm equipped with advanced technology to enhance efficiency and sustainability, and a legacy of commitment to supplying local communities with high-quality milk.

Like many dairy farmers, Steve encounters various challenges, including fluctuating milk prices, seasonal conditions affecting grass growth for feed, and escalating electricity bills. Additionally, the remote location of his farm poses a risk of power disruptions, which could have catastrophic consequences for his business operations.

Over the years, he has witnessed the evolution of dairy farming, marked by technological advancements aimed at optimizing production while minimizing environmental impact. That technology, however, has meant an increased demand for electricity.





Integration of Solar Power

Recognizing the need to reduce overhead costs and embrace sustainability, Steve invested in solar power infrastructure. Initially installing a 30-kW solar system on one of his older dairy sheds, Steve witnessed tangible benefits but realized the potential for further optimization.



"We put a 30-kW solar system on that five to six years ago, and we found some good benefits but probably got to the stage where, well, we have grown beyond it now."

Steve
FranklinWH homeowner

Energy Management and Battery Storage

To maximize the utilization of solar energy, especially outside of daylight hours, and to address the limitations of feeding excess power back into the grid, Steve opted to incorporate an energy management system with battery storage technology. With the installation of six FranklinWH batteries and plans for six more, Steve aims to achieve significant energy autonomy and provide resilience against power outages.

The new solar plus storage project commenced with a thorough assessment of the farm's energy consumption patterns. Leveraging smart meter data and historical usage information, the installer, Enviro Project, developed a tailored solar system capable of producing 100 kW of energy per day. Complementing this, they installed the FranklinWH system with intelligent energy management and six FranklinWH batteries, each with a capacity of 13.6 kWh, with plans to double the storage capacity to 12 batteries by April.

"FranklinWH sent their team from Sydney out here, which I was quite impressed with. They're an American-based company. They're on the ground here in Australia. I think they have 10,000 batteries on the walls, and they have 10,000 batteries working. So that gave me a lot of confidence in doing a farm like this, which is really in the middle of nowhere."

Matt Harold
Owner of Australian Enviro Projects



Outcome

The implemented solution has delivered significant benefits to the dairy farm. On average, the solar panels generate 380 kWh of power every day, surpassing the farm's daily consumption of 80-100 kWh. The battery storage ensures an uninterrupted power supply, particularly during inclement weather or low-light conditions. The FranklinWH system automatically balances solar energy, the grid, and battery storage to provide consistent power to keep the farm in full operation. This has not only reduced the farm's reliance on the grid but also provided cost savings and enhanced operational resilience by using stored solar power at night.



"The Six batteries we've got now have turned on and seem to be working quite well, so I'm sure another six batteries will only enhance it. I think we're aiming for about a 75% saving on our fuel bills. I think about a five-year return on investment too. So if that was the case and hopefully it is, that'll be a really good saving in the future as well."

Steve
FranklinWH homeowner

Installation Summary

Client: Steve
Location: 225 Wallaces Lane, Glenormiston South, VIC 3265
Installer: Enviro Project
System Allocation: 3 aGate + 6 aPower (+ 6 aPower)
System Size: 81.6 kWh (+81.6 kWh)

About FranklinWH

FranklinWH delivers energy management solutions providing safety, reliability, and energy freedom for homes. Franklin Home Power (FHP) is a whole-home energy management system integrating solar, battery, grid, and generator power sources, managing them to optimize the safety, reliability, and efficiency of home energy. The FHP is designed for simplicity and is easy to install, maintain and operate.

Contact us if you have any questions. We will help you achieve energy independence. Leave a message at the FranklinWH website.

Address: Level 9, 123 Epping Road, Macquarie Park, NSW 2113

Telephone: +61 1800 161 300

Email: info-au@franklinwh.com

Website: www.franklinwh.com



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