AGRICULTURE VICTORIA

Ellinbank SmartFarm

SOLAR & BATTERY FOR DAM WATER PUMP SYSTEM

FACTSHEET

SOLAR ENERGY SYSTEM

Apart from captured rainwater, the farm's water supply is provided by water pumped from a spring-fed dam (called the 'Farm D' dam).

To reduce carbon emissions, a solar array and battery system has been installed to support the operation of the Farm D pumping station. The solar photovoltaic (PV) system generates renewable electricity by converting energy from the sun. A zinc-bromine flow battery is used for energy storage.

Ellinbank Configuration

Number of Panels	24
PV Solar Panel Capacity	24 x 415 W = 9.96 kW
Inverter Power	10.0 kW
Battery Storage	10.0 kWh zinc-bromine

Zinc-bromine Battery Storage

A zinc-bromine flow battery is a rechargeable battery system. The electrochemical mechanism is the same as a lithium-ion battery, but this battery has a water-based electrolyte.

Compared to lithium-ion batteries, this technology is ideal for an agricultural site because of its negligible decline in performance over ten years and stable storage capacity.

The size and weight make them well suited outdoor installation. The disadvantages of this technology can include higher cost.

Ellinbank SmartFarm updates are available on the Energy Smart Farming website:
www.extensionaus.com.au

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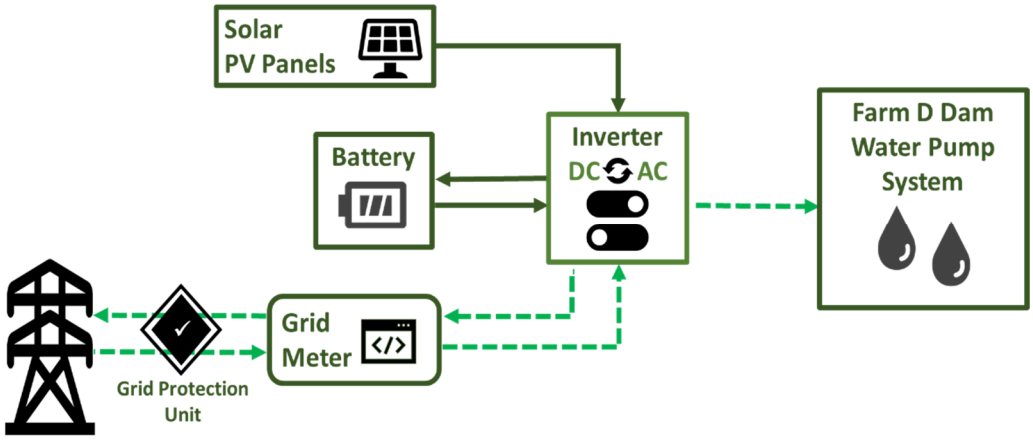

The Ellinbank SmartFarm in Gippsland is Australia's leading dairy innovation facility, fast-tracking innovative technology solutions in a research environment and showcasing them to the dairy industry. The Ellinbank SmartFarm has a target of becoming a carbon-neutral dairy farm and generating electricity through a range of alternative energy generation options including solar, wind and hydro energy to help achieve this goal.

Created January 2022 by Jess Li

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