



LEAD BATTERIES: ENERGY STORAGE CASE STUDY



Ecoult Energy Storage Solutions **Solar Workshop**

Dural, New South Wales, Australia

LJW Solar, a solar installation company, has an UltraFlex® 48 V system installed in their workshop, one of Ecoult's first on-grid, kilowatt-scale projects. LJW Solar wanted to achieve three things with this installation, which was commissioned in 2014: improve power quality, incorporate backup power, and improve their utilization of excess solar energy.

Most of LJW Solar's site energy use was during commercial daylight hours. The workshop had PV installed in excess of the site's average load, and whenever the PV generated exceeded demand, the system would export to the grid. However, with very little payback due to low feed-in tariffs of just a few cents per kWh.

"Ecoult's UltraFlex has allowed us to utilise our own PV to run our workshop with a technology we are comfortable with. We can work through grid outages and meet the highest power spikes without incurring capacity charges thanks to the 20 kW available from the one unit."

LJW Solar

Technical Specification

An UltraFlex 48 V system was installed, which contains sixteen 12 V UltraBattery® monoblocs to manage the site's peak loads and to store PV for brief periods.

This essentially micro-balances the load by shifting large, short power swings through the battery, trimming peaks from the grid profile and minimizing grid usage.

The area in which the site is located is also subject to brownouts without warning, which had previously impacted the client's ability to operate.

However, LJW Solar is now able to work through these events by relying on the battery system, whilst neighboring businesses shut down.



Technical Summary

Battery specification	4 strings, UltraBattery
Capacity	608 Ah
Overall voltage	48 V
Overall Power Output	20 kW
Available Stored Energy	20 kWh

UltraBattery

The UltraBattery is a hybrid energy storage device which combines the fast charging and long life of an ultracapacitor with the energy storage capability of a lead battery in one unit with a common electrolyte.

“The UltraFlex is unique in that it can pack a large lead battery punch of up to 20 kW depending on the inverter used, while still operating as a partial state-of-charge cycling battery for tasks requiring solar smoothing or power management. This makes it possible for a small industrial company to keep drawing normal loads despite a grid outage, allowing staff to maintain their schedules despite the local grid failing.”

John Wood, CEO, Ecoult

About the Company

Ecoult is the global energy storage arm of the world's largest single-site lead battery manufacturing facility, East Penn Manufacturing (EPM), known worldwide for its quality and environmental excellence.

Ecoult provides software, hardware, systems integration and engineering to monitor and control the energy storage systems and maximize their capabilities. EPM manufactures the Deka UltraBattery cells inside every system.