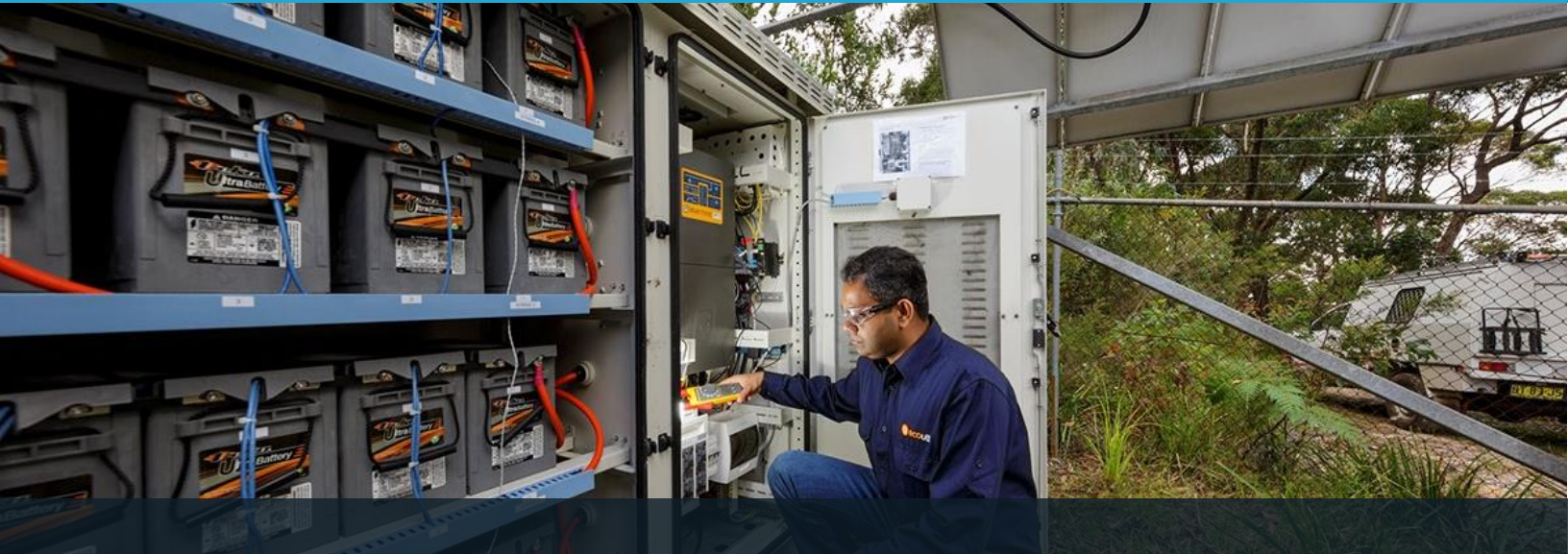




## LEAD BATTERIES: ENERGY STORAGE CASE STUDY



### Ecoult Energy Storage Solutions **Remote Telecommunications Base Station**

#### **New South Wales, Australia**

Ecoult has developed systems to store and manage energy – whether from diesel, battery and/or solar – for remote-area power systems and telecommunications towers.

Remote telecommunications sites, like the one pictured, are frequently powered by oversized generators to cater for peaks and planned expansions. Solar is often used for a limited period of the day, with PV power generally quite unpredictable due to intermittent cloud coverage.

**“We have used the learnings from this project to take our UltraBattery technology into the Indian telecommunications market, where grid instability and low grid penetration has led to high diesel dependency for hundreds of thousands of base stations. Our mission is energy storage for a cleaner plant, and every new diesel-mitigation project helps us deliver that mission.”**

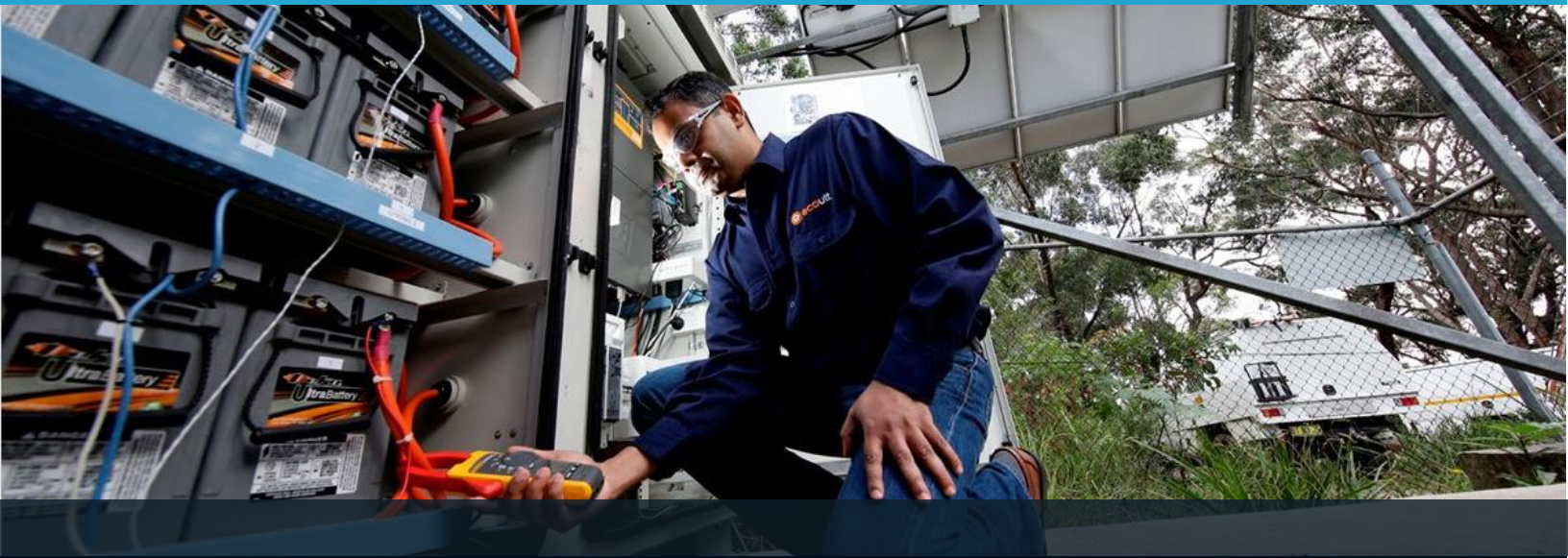
John Wood, CEO, Ecoult

#### **Technical Specification**

With the Deka UltraBattery® installed at this 20 kW cell tower site, which has been operating for 5 years since 2014 at continuous cycling, large savings are gained by removing the fluctuations from generator operation and utilizing the solar resource to its fullest advantage, whether the day is cloudy or sunny.

The generator is either running (at peak fuel efficiency) or off. When the generator is off, battery or battery/solar can operate the system alone, as seen in the figure below.

The Deka UltraBattery works hard at high power over a long service life to provide savings through lower fuel costs. This is particularly important in remote locations where refueling is more expensive.



The Deka UltraBattery is also virtually 100% recyclable, with all three major components safely recycled and used in new energy storage devices. This closed-loop recycling system reduces the environment footprint of the energy storage solution.

#### Technical Summary

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

#### About the Company

Ecoults 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.

Ecoults 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.

**"The client has experienced increased reliability and greatly decreased costs over the life of this project, which continues to operate after 5 years in the field."**

John Wood, CEO, Ecoults

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