

Energy Storage: Embracing Flexibility with UltraBattery

Multi-purposing – the use of a single technology to perform more than one application within a single installation – gives a range of saving or revenue options from a single battery investment. Usually multi-purpose installations include at least one fast-rate application (such as diesel support, grid frequency regulation, load balancing or renewable smoothing) and one slow-rate “energy” application (such as UPS, grid outage ride-through or renewable energy shifting). Ecoult Territory Manager Ganesh Ganeshkumar will describe UltraBattery technology and review a number of installations where UltraBattery has shown its dual-purposing capabilities.

On the kW-scale diesel-coupled installations in telecoms and micro-grids have seen very short (12 month) payback times and significant diesel reduction. One application has been to use batteries to better manage diesel in remote telecom base stations. These are typically expensive to refuel and service. UltraBattery, running on a cycling algorithm developed at Ecoult, has seen fuel reductions in excess of 50%. In a commercial diesel-assisted micro-grid application diesel use has dropped to virtually nil.

On the MW-scale the technology has been installed to perform pure frequency regulation (on the PJM grid in Pennsylvania) and, in 2016, will be installed as a dual-purpose MW-scale installation to provide both frequency regulation (for revenue) and stand-by potential for a major water utility. UltraBattery has also been installed as Australia’s largest battery to help maintain maximum self-consumption of renewable energy and minimum diesel use for the community of King Island - an 1100 square kilometre (425 square mile) island with a population of roughly 1700. In this application the objective is to provide smoothing, grid services and ride-through. The goal is reduce diesel use on the island by favouring relatively abundant PV and wind generation while improving power quality for end-users.