

220 kWh battery

Horizon Power, Western Australia's regional power supplier, has revealed plans to deploy a 78 kW/220 kWh vanadium flow battery.

From pv magazine Australia

Horizon Power, a utility owned by the Western Australia government, has signed an agreement with Perth-based energy storage company VSUN Energy for the purchase of a vanadium flow battery (VFB). It will be installed at Kununurra as part of a long-duration energy storage pilot program.

Horizon Chief Executive Officer Stephanie Unwin said the pilot program will support the organization's focus on solving the technical challenges associated with establishing long-duration energy storage solutions in harsh conditions.

"The VFB is specifically designed to deliver large amounts of energy over a long period of time and is temperature resilient, which is critical for our unique regional and remote networks," she said. "This is an exciting trial which will allow us to increase our understanding of the technology in a regional energy system and its ability to provide long periods of 100% renewable energy."

VSUN Energy, a subsidiary of Perth-based mining company Australian Vanadium Ltd. (AVL), will supply, install and commission the battery energy storage system for Horizon at Kununurra. The 220 kWh battery, which will be capable of delivering up to 78 kW of power, will be sourced from UK-based manufacturer Invinity Energy Systems.

Vanadium redox flow battery technology was first developed at the University of New South Wales in the 1980s. However, it has failed to reach the same levels of acceptance that lithium-ion technology has achieved.

This is surprising for advocates of the technology who say VFBs can be charged and completely or partially discharged hundreds of thousands of times without degradation. And the electrolyte remains unchanged - it can be recycled into another battery or used in other applications when the first installation reaches its end of life. VFBs are also non-flammable, and scalable but these batteries suffer from comparatively low energy densities.

Invinity Chief Commercial Officer Matt Harper said the technology provides a "proven and commercialized" alternative to the lithium-ion battery technology which currently dominates stationary energy storage applications.

"Due to their durability, safety and reliability, vanadium flow batteries have a vital role to play in reducing the



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use of fossil fuels in power generation, particularly in remote communities," he said.

Site planning and development work for the Kununurra battery is already underway, with the VFB to be delivered and installed later this year.

AVL Chief Executive Officer Graham Arvidson said the deal with Horizon is the first with an Australian energy utility and a sign of growing interest for VFB technology.

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