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First grid scale flow battery to be built in South Australia

Australia's first ever utility-scale vanadium flow battery is set to be installed in regional South Australia, aiming to demonstrate the potential impact that flow batteries could provide in reaching the energy storage target in the Australian Government's first Low Emissions Technology Statement.

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced \$5.7 million in funding to Yadlamalka Energy Pty Ltd (Yadlamalka Energy) to support the installation of a utility-scale vanadium flow battery at Neuroodla, near Hawker in South Australia.

The \$20.3 million project will co-locate a 2 MW / 8 MWh vanadium flow battery with a 6 MW solar PV array. It will connect to the National Electricity Market (NEM) to demonstrate the potential for grid-connected vanadium flow batteries to provide energy and frequency control ancillary services (FCAS). The battery for Yadlamalka Energy will be supplied by Invinity Energy Systems.

The Australian Energy Market Operator (AEMO) and the Australian Government's first Low Emissions Technology Statement identified an emerging requirement for medium-duration storage, with vanadium flow battery technology seen as a potentially scalable and flexible solution.

Vanadium flow batteries are a form of heavy-duty stationary energy storage, designed for use in high-utilisation applications such as being coupled with industrial scale solar PV generation for distributed, low-emissions energy projects. Vanadium flow batteries store energy in a non-flammable, liquid electrolyte and do not degrade with cycling like lithium-ion batteries. They can be scaled and located with greater flexibility than pumped hydro energy storage, which may increase the potential applications for this technology.

ARENA CEO Darren Miller said flow batteries were an exciting technology to address the emerging energy storage requirement.

"The strong uptake of variable renewable energy like solar PV and wind has highlighted the need for increased energy storage and vanadium flow batteries could play a major role in addressing this need, complementing the role of more established technologies such as pumped hydro energy storage and lithium ion batteries in the Australian market.

"We look forward to working with Yadlamalka Energy on this exciting project to demonstrate the benefits of flow batteries connected to the grid, particularly the ability to shift the dispatch of renewable energy into the evening when consumer demand is highest."

Andrew Doman, Chairman and founder of Yadlamalka Energy, thanked ARENA for its support for this important development in South Australia.

"Yadlamalka Energy is committed to developing renewable technology solutions to enable a sustainable energy future. This project will provide vital support for the electricity grid in South Australia, which relies heavily on intermittent renewable energy sources, leaving it vulnerable to unexpected changes in sunshine and wind. ARENA's contribution is critical to allowing our project to proceed and we look forward to working with them," he said.

Larry Zulch, Chief Executive Officer of Invinity said Australia was playing an important leadership role when it came to emerging energy technologies.

"Time and again, Australia has shown leadership in the adoption of game-changing energy technologies, and Yadlamalka Energy's and ARENA's joint vision for this project is right in line with that impressive history. Vanadium flow batteries are increasingly recognised as a robust, reliable and proven way of making

renewable energy truly dispatchable at grid scale. We look forward to working with Yadlamalka Energy and ARENA on this latest example of Australian energy leadership.”

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