



Media Release

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Sodium-ion battery pilot in Bondi could change the way we store energy

A new trial at Sydney Water's Bondi sewage pumping station will soon be storing renewable energy through the use of sodium-ion batteries, a cheaper alternative to the traditional lithium-ion batteries in use around the world.

The Australian Renewable Energy Agency (ARENA) today joined with project participants to announce commissioning of the \$10.6 million renewable energy generation system at the Bondi pumping station which features 6 kW of solar panels, an energy management system and a temporary lithium-ion battery pack.

Sydney Water will use lithium-ion batteries for 12 months to test the energy management system before transitioning to sodium-ion batteries as the first batches of batteries are received from industry partners in China.

The project has been led by energy storage researchers from the University of Wollongong (UOW) Institute for Superconducting and Electronic Materials (ISEM) in collaboration with Sydney Water and battery storage manufacturers in China.

Sodium-ion batteries have been developed to be comparable in performance to marketplace alternatives, as well as being cheaper, modular and expandable.

The Bondi pumping station was chosen due to the daily volume of wastewater it moves as well as proving the technology against highly intermittent and impulse-heavy loads.

The system will generate approximately 8,000 kWh of energy each year - more than the Bondi pumping station requires to power its own needs.

This pilot could be scaled up, as Sydney Water has a network of more than 780 sewage pumping stations.

On behalf of the Australian Government, ARENA previously announced \$2.7 million in funding for the Smart Sodium Storage Project which will develop and

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demonstrate sodium-ion batteries in renewable energy storage applications.

ARENA CEO Darren Miller said: “Part of ARENA’s role is to deliver secure and reliable electricity and battery technology will play a major role in allowing variable renewable energy to be dispatchable.”

“Thanks to the contribution of world-leading researchers from the University of Wollongong, these relatively inexpensive and reliable sodium-ion batteries aren’t too far off, potentially reducing our reliance on lithium.

“We’re always excited to support significant R&D which shows promising commercialisation prospects as the novel sodium-ion technology will assist in the faster uptake of renewable and innovative storage solutions for Australia,” Mr Miller said.

ISEM Director Professor Shi Xue Dou said the project was translating research outcomes into tangible impacts for society.

“Sodium-ion batteries are a potential game-changer because the materials are much more abundant than those for traditional lithium-ion batteries, reducing the cost of the raw materials as well as reducing reliance on scarce, expensive lithium.

“Critically, this project will deliver commercial-scale and ready-for-manufacture sodium-ion battery technology that allows lower-cost distributed renewable energy supply to become a reality.” Professor Dou said.

The smart sodium storage solution project will be instrumental in developing the entire supply chain including the product design, development and manufacturing process. The approach of piggybacking on established lithium-ion manufacturing and production processes is also a clever way of not only overcoming the difficulties of such a new technology but the approach will assist in bringing forward sodium-ions demonstration and wider use for storage in Australia and the world.

For further information, visit <http://s4.isem.uow.edu.au/>