MEDIA RELEASE

ARENA
Australian Government
Australian Renewable Energy Agency

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Powering regional and remote Australia with renewable hydrogen

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced $2.6 million in funding to Horizon Power to build Australia's first remote microgrid using renewable hydrogen generation in Denham, Western Australia.

The project will be a first-of-its-kind demonstration that will utilise solar and renewable hydrogen generation and storage to provide 526 MWh of dispatchable renewable electricity, enough to power the equivalent of 100 residential homes.

The plant will consist of a 348 kW hydrogen electrolyser with accompanying compression and storage and 100 kW fuel cell, alongside 704 kW of solar that will power the electrolyser to produce hydrogen for storage which can later be used in the fuel cell to deliver electricity when it is needed. The plant will be connected to the Denham hybrid power station system.

If the project is successful, Horizon Power will look to scale up the solution with increased hydrogen and solar penetration and replicate the technology in other remote power systems across its portfolio. It will also provide a reference case for remote power systems in other states and territories including Queensland and the Northern Territory.

Denham has been chosen as a regional demonstration site by Horizon Power due to its close proximity to quality wind and solar resources, availability of land, access to water and the need to find a solution to replace the current ageing diesel power station.

Construction is expected to commence in August next year, and be commissioned by December 2021.

The Horizon Power project is also receiving $5.7 million from the Western Australian Government's Recovery Plan, including $1 million from the Western Australian Renewable Hydrogen Fund. While renewable hydrogen is not currently commercially viable, the aim of the project is to test the technical capability of hydrogen as a dispatchable power source in remote power systems to test and improve the competitiveness of the technology.

The CSIRO's National Hydrogen Roadmap has highlighted remote area power systems as an early end use for hydrogen due to the high cost alternative of conventional energy sources in remote areas.

ARENA CEO Darren Miller said Horizon Power's demonstration would be a great test case for assessing the potential for renewable hydrogen to displace diesel for energy generation in remote communities across Australia.

"Remote and off-grid communities like Denham suffer from high energy costs due to costly diesel-based energy generation systems. The potential for these communities to generate, store and use their own renewable energy could simultaneously reduce costs and reduce emissions without sacrificing the reliability of energy supply.

"With projects like this and our $70 million commercial scale funding round, ARENA is hoping to reduce the overall cost of producing renewable hydrogen, in line with the National Hydrogen Strategy."

"Clean hydrogen could be a major export industry in the future, but in the near term we can utilise renewable hydrogen for domestic purposes and we're excited to see how Horizon Power's first-of-a-kind project could transform remote area power systems into state of the art renewable energy hubs," he said.

Horizon Power Chief Executive Officer Stephanie Unwin said the Denham Hydrogen Demonstration Plant will extend Horizon Power's knowledge and technical capability of hydrogen operating systems and test how to

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integrate and deploy this technology into remote diesel microgrids, common across regional Western Australia.

“This plant will demonstrate how hydrogen can reliably produce power for our towns currently dependent on diesel fuel power systems and allow us to transition our network away from higher emission generating sources and meet our target of no new diesel generation systems from 2025,” Ms Unwin said.

“This technology has the potential to be an environmental game changer for many remote towns in Western Australia and other similar locations around Australia, and allow greater uptake of reliable cleaner, greener renewable energy sources in the future.”

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