ARENA
MEDIA RELEASE

ARENA
Australian Government
Australian Renewable Energy Agency

10 YEARS

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Repurposing Broken Hill mine for renewable energy storage using compressed air

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has announced it has conditionally approved $45 million in funding to construct a 200 MW / 1600 MWh fuel-free energy storage facility, developed by Hydrostor Inc, utilising their Advanced Compressed Air Energy Storage (A-CAES) technology and repurposing a disused mine at Broken Hill, New South Wales.

ARENA's funding for the Silver City Energy Storage Project, developed by Hydrostor, is conditional upon the project reaching financial close, which is expected to occur in late 2023. Once built, the project will be one of the world's largest compressed air projects, providing at least 8 hours of storage.

The $652 million project will re-purpose a disused mine to facilitate the development of a subsurface air-storage cavity that will be used to store compressed air.

The project operates by compressing air during times of low electricity prices, storing it and releasing it through a turbo-expander to generate electricity during times of high demand and high energy prices.

The project is supported by Transgrid which earlier this year announced Hydrostor's A-CAES technology as the preferred solution in the Regulatory Investment Test for Transmission (RIT-T) to provide back-up power supply for the city of Broken Hill. The project will reserve at least 250 MWh of storage for this back-up power service.

Hydrostor's A-CAES technology provides an alternative to Pumped Hydro Energy Storage (PHES) for bulk energy storage, having a comparable price point and additional benefits including providing more flexible site selection, shorter development and construction times, and a lower environmental impact.

The flexible site selection allows Hydrostor's A-CAES technology to target specific problems and capture new value steams, including fringe-of-grid applications such as at Broken Hill, Renewable Energy Zones (REZs), and off-grid applications.

ARENA CEO Darren Miller said new technologies for medium duration storage will help to improve the economics of energy storage and give us a range of options for our future energy storage needs.

"Whether it be through pumped hydro, or innovative solutions like compressed air storage, medium and long duration storage is going to be vital to supplying power during the evening and morning peak-demand periods as Australia looks towards achieving 82 per cent renewable energy by 2030."

"Hydrostor's innovative solution provides us with another option to add to the mix. As a fuel-free storage technology, compressed air storage technology has similar applications to pumped hydro, such as providing dispatchability required to ensure reliability of the power system as more solar and wind power is installed."

"In Australia's regional towns at the fringe of the grid such as Broken Hill, new large scale storage technologies can provide back-up power to communities that will improve the reliability of electricity supply. Having more grid scale storage will also support more solar and wind in regional areas," he said.

For more information on Hydrostor's project, visit arena.gov.au.

ARENA media contacts:
0407 125 909
media@arena.gov.au

For more information
arena.gov.au