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ARENA funds green oxygen trial for wastewater treatment

The Australian Renewable Energy Agency (ARENA) has committed up to \$3 million in funding to the Barwon Region Water Corporation (Barwon Water) for the Green Oxygen for Wastewater Treatment project.

Barwon Water aims to investigate the use of pure oxygen produced as a byproduct of electrolysis to treat water more efficiently at its Northern Water Plant in Geelong and reduce wastewater treatment plant emissions.

ARENA CEO Darren Miller said Barwon Water's project will highlight how renewable hydrogen producers and wastewater treatment players can work together to decarbonise, illustrating mutually beneficial opportunities between sectors through the clean energy transition.

"This will highlight the application for green oxygen and enhance the commercial viability of renewable hydrogen, offering unique learnings in navigating the regulatory, technical and commercial aspects of oxygen offtake."

Conducted over two stages, ARENA's funding will support Barwon Water to first conduct a front-end engineering and design study to determine the technical and commercial feasibility of using pure oxygen captured from an electrolyser in its wastewater treatment process, which currently employs an oxygen-based aerobic treatment process. Oxygen will be sourced from Viva Energy's new hydrogen refuelling station at the nearby Viva Energy Hub, which is deploying a 2.5-megawatt electrolyser.

Importantly, outcomes of this project will also help to quantify a potential ancillary revenue stream for renewable hydrogen producers through the sale of oxygen, which may otherwise be discarded.

There are more than 1,200 wastewater treatment plants operating in Australia which contribute more than 2.95 million tonnes of CO₂e to Australia's emissions. Insights gained from this project, including increased understanding of approval pathways and required interfaces, as well as potential capital and operating savings, have the potential to lead to innovative improvements throughout the sector.

Barwon Water Managing Director Shaun Cumming welcomed the ARENA funding for this exciting project.

"At Barwon Water, we're always looking for innovative solutions for the problems of today and tomorrow.

"We're excited to explore the beneficial use of pure oxygen as a byproduct of renewable hydrogen production at the Viva Energy Hub hydrogen refuelling station. It's an exciting opportunity to reduce emissions from wastewater treatment.

"We look forward to building on the benefits of Viva Energy's new service station project with this investment and sharing the potential benefits for wastewater treatment with the water sector."

Viva Energy was approved for ARENA funding in 2022 to develop, build and operate its refuelling station to support the uptake of hydrogen fuel cell electric vehicles (FCEV) in heavy fleets, with \$34 million in total funding approved.

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