Fortescue: Building the Future with Hydrogen

With the development of Fortescue's world-leading Green Energy Manufacturing (GEM) Centre in Gladstone, the Central Queensland city is cementing its place as Australia's hydrogen capital – and the epicentre of a massive new industry capable of generating thousands of clean energy jobs.

The facility unveiled at Fortescue's 100ha site in April 2024 manufactures large-scale stacks of electrolysers, which use electricity to extract hydrogen from demineralised water. In the next phase of the development, the stacks will be used to produce green hydrogen for local and export markets with the potential to produce up to 8,000 tonnes annually.

Green hydrogen can be used to power vehicles, generate and store electricity, and produce heat without carbon emissions. As many of Australia's emissions-intensive industries move to new sources of power as part of the net-zero transformation, it is one of the valuable new export commodities being created in Central Queensland – already an economic powerhouse with essential industrial infrastructure, skilled workers and know-how.

Importantly, in the process of creating renewable energy, the Fortescue project is also creating jobs and other opportunities for local workers, businesses and industry, with flow-on benefits for the region's communities.

Backed by the Queensland Government and $44m from the Australian Government, the GEM Centre in Gladstone will generate a total of 240 jobs during construction and 93 ongoing local operational jobs.

The 15,000sqm electrolyser manufacturing facility will be capable of producing more than 2 gigawatts of electrolyser stacks annually, making it the nation's largest manufacturer of hydrogen electrolysers and one of the largest in the world. It is also the first fully automated facility of its kind in Australia.

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Hydrogen is made by using electrolysers to pass an electrical current through water (H20), splitting the two hydrogen atoms from the oxygen atom. When renewable energy sources such as solar and wind are used to power this process, the result is green or renewable hydrogen. The resulting oxygen is released back into the atmosphere, and the green hydrogen can be used domestically or exported for uses around the world.

"The process of splitting hydrogen and oxygen isn't new – but the innovative ways the world is looking to use green hydrogen to decarbonise are, and that means demand for green hydrogen and for the electrolysers to produce it is growing rapidly," Fortescue Energy's CEO, Mark Hutchinson, said at the opening of the electrolyser manufacturing facility. "This facility positions Fortescue and Gladstone as a large-scale producer of what will be an increasingly sought-after commodity in the global shift to green energy."