

Personalised for:
Yoana Cholteeva

12 October 2021

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FFI unveils plans for ‘world’s largest’ hydrogen electrolyser factory in Queensland

Fortescue Future Industries (FFI), a subsidiary of iron ore producer Fortescue Metals, along with the Queensland government have announced plans to build “the world’s largest” hydrogen electrolyser production plant as part of a Global Green Energy Manufacturing Centre (GEM) at Gladstone, Queensland. Additionally, FFI announced it is partnering with Incitec Pivot to examine converting an ammonia production plant in near Brisbane to run on green hydrogen.

FFI unveiled its plan for the six-stage GEM project on Sunday, with the firm’s chairman Andrew Forrest telling local media that the first electrolysers could be produced in 2023.

“This is a breakthrough for Queensland and Australian green energy. This Aldoga facility doubles the world’s current capacity,” Forrest told 10 News First Queensland.

“I want the first electrolysers to be rolling off the production platforms in 2023,” added Forrest.

Contingent on final approvals, construction on the GEM could start in is February 2022, FFI said.

FFI, underpinned by a strong Fortescue Metals balance sheet, is set to make an initial investment of AUD 114 million (USD 83.9 million) for the construction of what the company calls “the world’s largest” multi-gigawatt-scale electrolyser factory – with an initial capacity of 2 GW/year.

Subject to customer demand, the total investment could “be up to or in excess of AUD 1 billion as orders firm for electrolysers and other green industry equipment,” FFI said in a statement.

The company has said that the GEM project will also involve the manufacture of wind turbines, long-range electric cabling, solar photovoltaic cells, and associated infrastructure.

“FFI’s own requirements will underwrite GEM’s initial growth,” the firm said.

The GEM project fits with FFI’s parent company’s 2040 net zero target and with Australia’s goal of being a leading hydrogen player.

Incitec Pivot partnership

A day after announcing the GEM project, FFI said it is partnering with Australia’s largest fertiliser supplier Incitec Pivot to conduct a feasibility study to convert Incitec’s ammonia production facility – which currently runs on gas – at Gibson Island to run on green hydrogen.

Regarding its joint efforts with Incitec Pivot, FFI also plans to construct an on-site electrolysis plant at Gibson Island in Brisbane, scheduled to produce up to 50,000 tonnes of green hydrogen per year for conversion into green ammonia.

This venture is looking to help establish a new domestic and export market for green ammonia and grasp the opportunity for the clean fuel to power the Port of Brisbane and Brisbane airport.

The partnership with Incitec Pivot will start with a feasibility study, with preliminary results set to be available by the end of 2021.

“Incitec Pivot... have an ammonia facility on Gibson island which produces 300kte/y, which requires about 50kt/y of hydrogen, so if they get the hydrogen electrolyser right it will back out their LNG feedstock altogether,” an industry expert told Gas Matters Today.

“Seeing north eastern Australia becoming the world's largest green ammonia producer, with all the wind and sun they have for renewable energy is potentially very real,” the source added.

Questions have been raised over the cost competitiveness of green hydrogen/ammonia compared to blue and grey. However some market observers suggest green hydrogen and ammonia will be competitive in the near future.

“Definitely yes in that region. You have incredibly good electrolyser electricity utilisation from a combination of wind and solar. Renewable production costs are coming down and electrolyser capital costs are coming down. While CCS [carbon capture storage] schemes are good the cost of CCS schemes is typically more than budgeted...,” Stephen Harrison, Managing Director at sbh4 told Gas Matters Today.

FFI has emphasised that decarbonising existing industrial plants is a major challenge, however it “aims to demonstrate that infrastructure conversion is both technically and economically feasible,” the company said.

FFI has said that “committed” to generating 15 mt of green hydrogen annually by 2030, rising to 50 mt in the decade thereafter.

“[T]hese are really, really big numbers (10mte of hydrogen is around 60mte ammonia – global production is around 150mte/y). This could be quite a game changer in the fertiliser industry,” the industry expert said. – YC/ET



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