

IS THE PROPOSED FORTESCUE METALS GREEN HYDROGEN PROJECT FOR PRINCE GEORGE NOW DEAD?

In September 2023, the Fortescue Future Industries (FFI), a subsidiary of Fortescue Minerals Group (FMG) of Australia, announced a plan to construct a green hydrogen production facility in Prince George area.¹ Dr. Andrew Forrest, the owner of both companies, envisioned a very large green hydrogen and ammonia facility that would produce 140,000 tonnes of green hydrogen and 700,000 tonnes of green ammonia annually. The company estimated that 100 permanent jobs would be created, but large amounts of water and 1,000 megawatts of clean electricity would be required to create hydrogen and ammonia gases. The plan proposed exporting green hydrogen gas (via ammonia gas) to welcoming world markets.

Andrew Forrest has used the wealth generated from the FMG (mostly iron ore) to champion of decarbonization through the use of green hydrogen. “Forrest has been vocal about exploring the potential of hydrogen production and export development from Canadian markets and has been lobbying several other governments including the U.S. and U.K. to set up shop there. In August 2022, Fortescue also signed memorandums of understanding with Newfoundland First Nations, Qalipu and Miawpukek. FFI’s plans there include a hydrogen electrolysis and green ammonia production plant, liquid ammonia marine export terminal, and wind power generation facilities.”²

The FFI proposal is important because Premier David Eby supported the notion of a “hydrogen hub” for Prince George, as well as the expected economic stimulus that would be created. The production of green hydrogen is highly power intensive, and the proposal to use some 1,000 MW of power supplied by BC Hydro (about the output from Site C) was a major concern to all except the premier.³

Also, the overall cost to produce green hydrogen makes it uneconomic compared to other production methods. The production of green hydrogen requires large amounts of clean electricity and water. It has been calculated that to produce one tonne of hydrogen

¹ The proposal was unveiled in conjunction with the local Indigenous band, which has approximately 400 members on the reserve; <https://hydrogen-central.com/australian-mining-tycoon-andrew-forrest-announces-green-hydrogen-project-northern-bc/#:~:text=Australian%20mining%20tycoon%20Dr.,13>

² Ibid.

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https://www.bcpolicyperspectives.com/media/attachments/view/doc/commentary_green_hydrogen_project_18_september_2023/pdf/commentary_green_hydrogen_project_18_september_2023.pdf

through the electrolysis of water requires 52.5 MWh of electricity (including compression) and, the burning of one tonne of hydrogen will generate 15 MWh. Therefore, the energy invested is 3.5 times greater than energy returned. Another study suggests that the energy invested need be only 1.5 times the energy returned.⁴

Fortescue Minerals Ends Green Hydrogen Quest

On 17 July, 2024, Fortescue Minerals announce that it is pausing further activities to produce 15 million tonnes of green hydrogen by 2030, and consolidating FFI with the parent company and eliminating 700 positions.⁵

“There are two major problems plaguing the company's ambitious plunge into hydrogen fuel. The most obvious is that hydrogen is prohibitively costly to produce, which means it has difficulty competing with fossil fuels. And the second is that Fortescue's plunge into renewables (more than 100 wind, solar and hydrogen projects around the world) has ultimately been funded by good, old-fashioned iron ore.”⁶

Iron ore is the primary profit source for FMG. Since January 2024, as the price of iron ore declined, the share price of FMG has dropped by 33%. The decline in the price of iron ore is linked to the weakening economy of China.

Andrew Forrest said that the cost of clean electricity must be much lower to make green hydrogen economically viable. Either that or the cost of using fossil fuel to produce hydrogen gas must be dramatically increased, for example some sort of carbon tax. He has implied that the production of green hydrogen is not practicable unless the government provides a subsidy to encourage the private sector to make the necessary investment.

It remains to be seen if the retrenchment by the FMG will be reflected in the decision to abandon work on the massive Prince George green hydrogen project. This would eliminate a major pressure on BC Hydro's future electricity supply estimate.

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The writer is a retired senior BC government public servant whose paper describing the BC government's manipulation of the finances of BC Hydro from 2008 to 2014 was published by BC Studies in November 2016. BC Studies published his paper on the 40-year financial history of ICBC in 2013. He is an intervener in the BC Utilities Commission's reviews of ICBC's and BC Hydro's rate requests.

See also

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https://www.bcpolicyperspectives.com/media/attachments/view/doc/K05W_commentary_hydrogen_25_may_2024_1/pdf/K05W_commentary_hydrogen_25_may_2024_1.pdf p. 2.

⁵ <https://reneweconomy.com.au/forrests-ambitious-green-hydrogen-target-is-on-hold-but-australia-should-keep-powering-ahead/amp/>

⁶ <https://www.abc.net.au/news/2024-07-21/green-hydrogen-forrest-fortescue/104120492>

Vaughn Palmer July 23 2024.

<https://vancouversun.com/opinion/columnists/vaughn-palmer-australian-developer-putting-bc-hydrogen-projects-on-hold>

Nelson Bennett July 24 2024.

<https://www.biv.com/news/resources-agriculture/fortescues-green-hydrogen-project-in-prince-george-getting-back-burnered-9259237>