

Australia’s green hydrogen industry: a challenging future

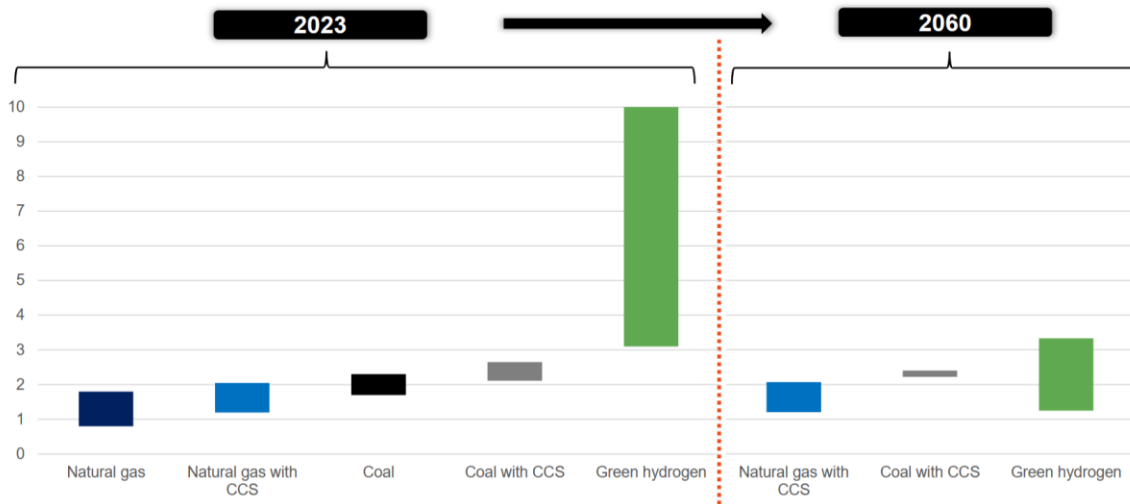
June 2023

Australia’s green hydrogen industry remains at a nascent stage despite a new \$2 billion [government initiative](#) aimed at attracting new investment to the sector.

Green hydrogen could play a critical role in the world’s transition to net zero emissions by 2050 but its relatively high cost currently remains a stumbling block.

“It is a nascent industry and until there is some level of demand or certainty of demand, we’re going to be waiting to be able to define when the industry will really take off,” Shohan Seneviratne, Chief Executive Officer, Murchison Hydrogen Renewables, said.

Mass adoption and scale may lead to reduction in cost of green hydrogen production over the long-term



Source: International Energy Agency

Green hydrogen is produced by renewable energy-powered electrolyzers that split water into hydrogen and oxygen gas molecules. The hydrogen (in the form of methanol or ammonia) can then supply clean energy for a range of uses such as industrial processes.

A global green hydrogen race

Its potential has spurred governments around the world to announce huge subsidies, such as the US Inflation Reduction Act which includes a new [hydrogen production tax credit](#), adding to \$US9.5 billion in pre-existing clean hydrogen initiatives.

Lachlan Creswell, Head of Green Investment Group ANZ, Macquarie Asset Management, said the Inflation Reduction Act would also subsidise the cost of producing green electricity (about 70% of the input cost of green hydrogen) making the US a very attractive destination.

“For better or worse, the US and the EU do have a head start on us, both from a policy perspective, but also just that they’ve got large, existing demand for hydrogen as well,” Creswell said.

However, Australia’s abundant land and strong renewable wind and solar energy sources could make it the natural home for the industry.

Designated regions for Australian hydrogen industry



Source: National Hydrogen Infrastructure Assessment: Final Report, ARUP.

Australia's new [National Hydrogen Strategy](#) lays out an ambitious plan for the country to be one of the top three exporters to Asian markets by 2030. There are around 100 early stage projects currently under development, including two to three major projects that will receive a production credit subsidy from the Hydrogen Headstart program, according to Ella Hurley, Vice President, BlackRock.

"From an investment perspective, before making any hard decision, I would be waiting until mid-next year to see what comes out of those two to three flagship projects, as these will be provided with revenue support for ongoing operational costs from the \$2 billion budget measure" Hurley said. "I think from our perspective, we have been investing in different technologies, which we've seen as more lucrative, such as batteries as they have immediate application in the NEM."

More support and demand are critical

Hurley stated an effective guarantee by government such as 20-year power purchase agreement would make investing in the sector far more attractive although Creswell suggested similar support could also come from private companies.

"We've seen LNG projects underwritten through long-term offtake agreements from North Asian customers and we think that it's likely, in that context, a similar commercial structure can be established," Creswell added.

Seneviratne said large potential overseas offtake markets such as Japan, Singapore and South Korea were waiting on their own government's policies, and in addition to government incentives, Australia needed to focus on green steel, which could accept large green hydrogen volumes and use it effectively.

Meanwhile, consumer demand may pick up, given the extra cost of using green hydrogen to produce small volumes of retail products, such as one kilogram of fertilizer, was relatively small.

"It's not dissimilar to organic foods here in Australia where we're happy to pay a premium for it – that transition could be one of the things that drives it."

Another challenge to building hydrogen hubs was finding land where producers, users and exporters could be co-located to ensure projects were scalable. For example, Seneviratne said it could take up to three years to negotiate an Indigenous Land Use Agreement, while other landowners often wanted to keep their scenic views.

"In Australia, we are not used to seeing wind turbines in our backyard," Seneviratne said. "The mind frame isn't about whether it's aesthetically pleasing or not, it's just a reluctance to see anything in our horizon."