

bp study confirms feasibility of large-scale production of green hydrogen and green ammonia using renewable energy in Australia

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- Study finds production of green hydrogen and ammonia using renewable energy is technically feasible at scale in Australia
- Findings also support bp's conviction that West Australia is ideally positioned for green hydrogen and green ammonia production
- Development will require significant infrastructure investment in ports, water and electricity networks and distribution.

bp Australia today announced the findings of its study into the feasibility of an export-scale green hydrogen and ammonia production facility in Western Australia.

The study found that the production of green hydrogen and green ammonia using renewable energy is technically feasible at scale in Australia. Its findings also support bp's conviction that, with its vast potential solar and wind resources, existing infrastructure and proximity to large, long-term markets, Western Australia is an ideal place to develop large scale renewable energy assets that can in turn produce green hydrogen and/or green ammonia for domestic and export markets.

Green hydrogen is produced from the electrolysis of water, using renewable energy. It can be used as a fuel and energy source in hard-to-decarbonize industries. Green ammonia is produced by combining green hydrogen and nitrogen (from the air). Ammonia can be utilised as a hydrogen carrier, providing advantages over transporting pure hydrogen.

The feasibility study has provided bp with valuable insights into the potential for green hydrogen and green ammonia production which it will make publicly available as part of a knowledge sharing agreement with ARENA to help progress the development and use of green hydrogen energy.

bp will continue to work with key stakeholders to develop plans for integrated green hydrogen projects in Western Australia, working to define the technical and infrastructure solutions, customer demand and business models that would be required for a successful development.

Frédéric Baudry, president, bp Australia, and SVP fuels & low carbon solutions, Asia Pacific, said: "bp is putting its strategy in action by accelerating its position in low carbon technologies and providing end-to-end integrated energy solutions for our customers, including hydrogen.

“This study confirms the potential for scaled-up green hydrogen in Western Australia. This looks particularly promising in the mid-west of WA, which has existing infrastructure, access to land and abundant renewable energy resources such as wind and solar. Importantly, our study also confirmed strong demand from potential customers in the hard-to-abate sectors, and for both local and export markets. This has the potential to position Australia as a regional powerhouse of the energy transition.

“bp strongly supports the Australian government’s focus on technology and the Technology Investment Roadmap, which identified hydrogen as priority low-emission technology essential for the decarbonization of industrial processes. I am confident this study will make a valuable contribution to the government’s strategy to accelerate emerging technologies, and I thank the government for its support.”

First announced in May 2020, the feasibility study was supported by GHD Advisory, Lightsource bp and the Australian Renewable Energy Agency (ARENA). It simultaneously considered the financial and technical implications for a fully integrated renewable hydrogen and ammonia supply chain.

The study examined the hydrogen supply chain and domestic and export markets at two scales: a demonstration/pilot scale (4,000 tonnes of hydrogen making up to 20,000 tonnes of ammonia) and commercial scale (200,000 tonnes of hydrogen making up to 1 million tonnes of ammonia). It considered three different hydrogen production technologies, and the plant power source was modelled as a mix of solar and wind with some battery support. This renewable power modelling was completed by Lightsource bp.

The study highlighted that, depending on the location and scale, significant additional infrastructure investment would be required – particularly for port, electricity and water services.

The study found that distribution could be customised to suit customer requirements, including gaseous or liquid hydrogen or ammonia via pipeline, truck, train or ship.

Economic returns were also explored, and it was found that for this to be effectively understood the renewable hydrogen and ammonia markets need to be further advanced. The study found that significant scale will be required for general hydrogen fuel use to be commercially viable.

ARENA CEO Darren Miller said: “bp’s analysis of the economic opportunity presented by renewable hydrogen will help Australia determine how it can be scaled-up to satisfy future demand. The report represents a vital building block in our pathway to creating a fully integrated renewable hydrogen supply chain, allowing Australia to become leaders in a future export industry.”

Jason Fonti, GHD Advisory’s origination and value chain leader, added: “The magic figure is producing hydrogen below \$2 per kilo and the pathway to get there is becoming clearer. The study

has highlighted that, through innovation, talent, commitment and collaboration, Western Australia can become one of the major exporters of hydrogen in the global market.”

Read the full report here: [Geraldton Export-Scale Renewable Investment \(GERI\) Feasibility Study](#)

Notes to editors

About bp

bp has set an ambition to become a net zero company by 2050 or sooner, and to help the world get to net zero. Our team in Australia is working hard on our low carbon goals via alternative energy solutions, technology and as a gas producer.

bp has been operating in Australia for more than 100 years. bp is one of Australia’s leading premium fuel retailers with around 1,400 branded retail fuel sites across the country, of which approximately 350 are company-owned, and more than 1,000 are owned and operated by our independent business partners.

bp is engaged in the exploration and production of oil, natural gas and liquefied natural gas and the marketing of petroleum and lubricant products in Australia.

bp is also a member of the Australian Hydrogen Council and the Global Hydrogen Council.

Find out more about [bp in Australia](#).

Further information

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