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Exploring renewable hydrogen opportunities at the Port of Newcastle

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has today announced \$1.5 million in funding to support a feasibility study into the development of a 40 MW hydrogen hub located at Port of Newcastle in New South Wales.

The \$3 million study will be led by Port of Newcastle and Macquarie's Green Investment Group and supported by project partners Idemitsu, Keolis Downer, Lake Macquarie, Snowy Hydro, Jemena and project collaborators Macquarie Agriculture and University of Newcastle. It will determine a broad and comprehensive range of potential use cases for green hydrogen, including customer-led studies into mobility, bunkering, energy production, and industrial applications such as renewable ammonia at scale for domestic fertiliser use.

The project will benefit from the deep expertise of the joint developers, project partners, collaborators and globally recognised specialist consultants. The study will ultimately determine the optimal site within the Port for the hub as a springboard for renewable hydrogen to flow within the region and future export.

The study will also investigate the potential to scale up hydrogen production for export, leveraging the Port of Newcastle's existing domestic and international supply chain links. While stage one of the project is underpinned by a 40 MW electrolyser, the study will also consider the future staged scale up of an electrolyser to around 1 GW with the ability to produce up to 150,000 tonnes of hydrogen per year for domestic and export use.

Port of Newcastle is the largest port on Australia's east coast and currently handles approximately 4,400 ship movements and over 160 million tonnes of cargo annually whilst only utilising less than 50 per cent of its channel capacity. Newcastle is an ideal location for a hydrogen hub due to the existing industries, infrastructure, access to a deep-water port, and a highly skilled workforce. Port of Newcastle's existing export routes to Japan and Korea represent potential renewable hydrogen export markets in the future.

Since the release of Australia's National Hydrogen Strategy by the Council of Australian Government's (COAG) Energy Council in November 2019, the Australian Government has been advancing international collaborations, undertaking national coordination and supporting priority industry projects to grow a clean, innovative, safe and competitive hydrogen industry.

The development of clean hydrogen is one of the key stretch goals outlined in the Australian Government's Low Emissions Technology Statement. The stretch goal is to produce hydrogen for less than \$2 per kg, or 'H2 under 2', which is the price where hydrogen is expected to become competitive with other energy sources for industry and transport.

ARENA has also recently launched its new 2021 Investment Plan with the project strongly aligned with the strategic priority of commercialising clean hydrogen, which aims to support a viable domestic and international clean hydrogen economy.

ARENA CEO Darren Miller said if the study proved the project to be feasible, it could enable Newcastle to become a major player in producing clean hydrogen.

"We're excited to be a part of this feasibility study which presents an opportunity to accelerate the diversification of Port of Newcastle which is crucial as Australia starts its journey to net zero by 2050.

Newcastle is an ideal location for this project due to existing infrastructure and skilled workforce, both of which will be so important as we scale up. With the backing of Macquarie's Green Investment Group, Newcastle could become a hub for the production and use of hydrogen for domestic and export opportunities for Australia."

ARENA recently approved \$103 million in funding to support three 10 MW electrolyser projects through the Renewable Hydrogen Deployment Funding Round. Since 2018, ARENA has also invested \$60 million to support pre-commercial activities across 36 projects, including a number of feasibility studies focusing on smaller scale deployments with domestic end-use cases.

The project represents ARENA's second feasibility study for a large-scale hydrogen production project. With funding previously announced for Stanwell to complete a feasibility study for a proposed hydrogen export market located in Gladstone, Queensland.