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Renewable hydrogen could power Moranbah ammonia facility

The world's largest green ammonia plant powered by renewable hydrogen could be built in Queensland, thanks to support from the Australian Renewable Energy Agency (ARENA).

On behalf of the Australian Government, ARENA today announced \$980,000 for Dyno Nobel Moranbah Pty Ltd (Dyno Nobel), a business of Incitec Pivot Limited, to conduct and assess the feasibility of building a renewable ammonia facility at its existing Moranbah ammonia plant.

This project is aligned with ARENA's new investment priorities focussed on accelerating hydrogen in Australia and helping industry to reduce their emissions, which are geared towards future proofing our energy system and economy and helping to further unlock the vast renewable resources Australia has on offer.

If feasible, the proposed green ammonia facility would include up to a 160 MW electrolyser and 210 MW solar farm co-located at Moranbah. Dyno Nobel's Moranbah facility currently operates a modern ammonia plant employing up to 110 people and manufactures more than 360,000 tonnes of ammonium nitrate annually for supply to mining customers.

The company currently uses natural gas as its feedstock to make hydrogen for ammonia. The \$2.7 million feasibility study will look at the potential to use renewable hydrogen produced via electrolysis to increase ammonia production at its facility to meet increased demand in the region for ammonium nitrate.

According to Bloomberg, over 50 per cent of deliberate hydrogen production is used for ammonia. Ammonia production accounts for 1 per cent of global emissions.

This is the second ARENA-funded feasibility study looking at how renewable hydrogen could produce ammonia, after it was also announced today that Queensland Nitrates would also investigate building a renewable hydrogen ammonia plant at their existing facility in Moura.

ARENA CEO Darren Miller said this was the first step to decarbonising the ammonia sector, and would also help to progress the commercialisation of renewable hydrogen for domestic and international use.

"Hydrogen is a huge opportunity for Australia, both for domestic use and as an export opportunity - and we believe that you cannot realise the export potential without a domestic market, which is why ARENA is looking to fund renewable ammonia and other domestic applications."

Mr Miller said ARENA has identified ammonia sector as a key user of hydrogen and one that represents a significant opportunity to deploy renewable hydrogen technologies.

"As ammonia already uses hydrogen, ammonia production at large scale is an ideal opportunity for us to begin exploring the pathway to lowering emissions through the use of renewable hydrogen as it already uses hydrogen in an industrial application, and has existing supply chains and end users," he said.

"Given ammonia production is an energy-intensive industry that accounts for one per cent of global emissions, this project could also help the ammonia industry to reduce its emissions by switching to renewable hydrogen," he said.

Tim Wall, President Global Manufacturing Incitec Pivot Limited said: "The aim of the feasibility study is to determine whether renewable hydrogen can be produced in a way that makes commercial sense to support expanding our Moranbah manufacturing facility in central Queensland.

"We are pleased to be working with ARENA to determine whether we can lower the cost of producing renewable hydrogen at industrial scale, which would support local industry and jobs, and reduce our carbon footprint."