

Pilbara potential for ammonia as clean iron ore carriers fuel

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A groundbreaking feasibility study has highlighted the potential for using clean ammonia to refuel ships, particularly iron ore carriers, visiting the Pilbara region of Western Australia.

The study, commissioned by Yara Clean Ammonia (Yara) and Pilbara Ports, was undertaken by Lloyds Register, and looked at key areas including the estimated demand and likely availability of ammonia as a replacement shipping fuel. The potential risks and regulatory requirements for ammonia bunkering (refueling) at the ports were also considered.



Key results of the study show that safe ammonia bunkering is both economically and operationally viable within the Pilbara region.

The study indicated that ship-to-ship bunkering operations could be performed within acceptable risk levels at anchorages in Dampier and Port Hedland. Moreover, the study confirms that existing ammonia production and export infrastructure within the Pilbara, such as Yara's Karratha plant and Pilbara Ports' Bulk Liquids Berth at Dampier, could be leveraged to initiate bunkering operations in the near-term.

The results also show the demand for ammonia as a fuel to decarbonise the international iron ore trade, reaching a volume potential of 1 million to 1.5 million tonnes in 2035.

Yara Clean Ammonia Senior Vice President Commercial Murali Srinivasan said the level of demand reflected the push by iron ore miners and the steel industry to decarbonise.

"The study has shown that a key enabler for meeting this demand is Yara's existing assets including the world-scale Yara Pilbara Fertilizers ammonia plant near Karratha. Furthermore, the current development of Yuri renewable hydrogen project on the Yara Pilbara site will be the first in Australia to inject green molecules into an existing ammonia plant, and Yara is vigorously exploring options to ramp up volumes of clean and low carbon ammonia to lay the foundation for a reliable supply chain to serve the emerging shipping fuel market." Mr Srinivasan said.

Pilbara Ports Chief Executive Officer Samuel McSkimming said that, with the carbon reduction efforts in the steel industry supply chain, bulk carriers are a natural starting point for the early adoption of alternative marine fuels.

"The Pilbara contains the world's largest bulk export ports. Last year we achieved 752.4 million tonnes of trade with more than 6,829 vessel visits. This scale of operations cannot be found anywhere else in the world, and it makes the Pilbara's ports the natural beachhead from which the global bulk carrier fleet will decarbonise," Mr McSkimming said.

"The study is an important step towards implementing safe ship to ship ammonia bunkering at our anchorages in Dampier and Port Hedland.

"Ammonia is already widely produced, used, and shipped in industrial quantities around the world. To be able to expand its application as a green shipping fuel would greatly reduce shipping emissions."

A domestic bunkering industry in the Pilbara would also create new industry and job opportunities for Western Australia and the Pilbara community.

"We are proud to contribute to a green transition in the Pilbara region and more broadly in the global shipping industry. Pilbara Ports is progressing on several strategically significant projects, including major port infrastructure

upgrades at Dampier and Port Hedland, to support the production of clean fuels in the Pilbara," Mr McSkimming said

Pilbara Ports and Yara plan to continue working together as first movers to enable safe ammonia bunkering in the Pilbara as the switch to zero-carbon shipping materializes.

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