

# GCMD Prepares for Ammonia Bunkering Pilot in Singapore

by Ship & Bunker News Team

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The **Global Centre for Maritime**

**Decarbonisation** (GCMD) has completed an ammonia bunkering safety study, and is preparing for a pilot ship-to-ship transfer of the alternative marine fuel in **Singapore**.

The study commissioned by the GCMD in **January 2022** and carried out by **DNV** has now been completed, finding the risks for conduction ammonia bunkering pilots in Singapore to be low or mitigable, the organisation said in an emailed statement on Thursday.



Ammonia could soon be on sale as a bunker fuel in Singapore. File Image / Pixabay

"Despite its toxicity and associated risks, green ammonia is one of the potential fuels that can decarbonise the shipping industry," the organisation said in the statement.

"With the completion of this study, local regulatory authorities will be able to use the report and its guidelines to deliberate the undertaking of an ammonia bunkering pilot.

"Because ammonia-fuelled vessels are not available today, ammonia transfers in the port waters of Singapore will be first carried out with ammonia carriers to ready stakeholders of the ecosystem for an actual bunkering pilot when ammonia-fuelled vessels are on the water."

DNV worked with **22 study partners** and took feedback from more than **130 sources** to put its report together.

"More than 400 potential risks were identified and assessed based on four technically feasible operational concepts: breakbulk and bunkering at anchorage, as well as shore-to-ship transfer and cross-dock transfer at two land-based sites for potential ammonia bunkering," the GCMD said.

"The consortium found the identified risks to be manageable with mitigation measures.

"The analysis showed that individual fatality and injury risks depend on the flow rate of ammonia, the number of transfer operations, duration per transfer operation, and the length of piping and transfer arms.

"Given the small number of ammonia bunkering pilots that would be carried out annually, the individual risks thresholds set by the Major Hazards Department of the Ministry of Manpower are not expected to be triggered.

"Coarse Quantitative Risk Assessment (QRA) using a deterministic dispersion model revealed a safety zone of 200 to 400 m for breakbulk and bunkering operations at anchorage with flowrates up to 700 cbm/hr."

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