



Professor Lynn Loo, chief executive officer of the Singapore-based Global Centre for Maritime Decarbonisation. Photo: GCMD

Safety study gives go-ahead for ammonia bunkering pilot in Singapore

Global Centre for Maritime Decarbonisation reports that ammonia bunkering risks are low and mitigable

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By **Jonathan Boonzaler**  in **Singapore**

The Singapore-based Global Centre for Maritime Decarbonisation (GCMD) and its appointed consultant DNV Maritime Advisory have completed an ammonia bunkering safety study that has found that the risks identified for conducting pilots in the Port of Singapore are low or mitigable.

The successful conclusion of the study, which began in January and was supported by infrastructure consultancy Surbana Jurong and the Singapore Maritime Academy, paves the way for a pilot project to take place at three identified sites.



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Launching the ammonia report on Thursday, GCMD chief executive officer Professor Lynn Loo said the aim is for the first transfer of ammonia to take place using proxy assets by end 2023, subject to obtaining the greenlight from the relevant regulatory agencies.

Ammonia transfers in Singapore's port waters will begin with ammonia carriers because ammonia-fuelled vessels are not yet available. This will prepare ecosystem stakeholders for an actual bunkering pilot when ammonia-fuelled vessels are in operation.

The nine-month-long study has resulted in a report titled "Safety and Operational Guidelines for Piloting Ammonia Bunkering in Singapore". The study analysed capacity needs and feasible operating concepts and recommended suitable sites for pilots.

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 transfers and cross-dock transfers at two land-based sites for potential ammonia bunkering.

The identified risks were found to be manageable with mitigation measures.

The study recommended a safety zone of 200 metres to 400 metres for breakbulk and bunkering operations at anchorage, with flowrates of up to 700 cbm per hour.

The report also estimated the total capital expenditure for the additional infrastructure buildout needed to operationalise ammonia bunkering at two land-based sites.



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Knut Orbeck-Nilssen, CEO of DNV Maritime, said that further ammonia bunkering pilots and studies are key to understanding, assessing and mitigating the safety risks associated with using ammonia fuel onboard the world fleet.

Green ammonia, despite its toxicity and accompanying dangers, is one of the frontrunner future fuels under consideration for decarbonising the shipping industry.

GCMD said that 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.

The full report will be made widely available at a later date.