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FACTSHEET

NTU, DNV GL and Shell host national competition to find innovative ways for shipping industry to go green

Nanyang Technological University, Singapore (NTU Singapore), international quality assurance and risk management firm DNV GL, and global energy company Shell, organised a national competition to develop green solutions for the shipping industry.

Dubbed the "**Low Cost LNG Retrofit (LCLR) Challenge**", the competition aims to explore ideas that could help reduce the cost of retrofitting a Liquefied Natural Gas (LNG) fuel gas system to an existing ocean-going vessel.

This would allow shipping companies to embrace cleaner fuels and reduce harmful emissions, including adhering to the International Maritime Organisation's (IMO) stringent guidelines on ship emissions that comes into effect next year.

Held from July to December last year, the competition attracted over 60 participants from NTU, the National University of Singapore, Singapore Institute of Technology, and Newcastle University Singapore.

Participants were encouraged to develop cost effective and radical LNG fuel gas system designs and installation concepts that could be retrofitted to an existing vessel with a conventional fuel oil system.

Two teams from SIT and one from Newcastle University were named as commendation award winners, with each group receiving S$5,000 each.

Professor Low Teck Seng, Chief Executive Officer of the National Research Foundation (NRF) presented the prizes at the Singapore Maritime Technology Conference (SMTC) 2019 this afternoon.

The proposals by the three teams outlined ways to reduce costs and streamline retrofitting operations such as using alternative materials to store LNG fuel, improved methods to install LNG fuel systems and alternative methods to speed up retrofitting process.

The proposals include using manganese-steel as a cheaper and viable alternative to the current nickel-based steels, factoring in the material's tensile strength and feasibility to store LNG fuel at cryogenic temperatures (below minus 150 degrees Celsius).

A panel of international experts from NTU, Shell, DNV GL, Keppel Offshore and Marine, WinGD, Wartsila, Sembcorp Marine, Singapore Maritime Institute (SMI), and the Maritime and Port Authority of Singapore (MPA) judged all project proposals.

The competition is part of efforts of NTU's Maritime Energy and Sustainable Development Centre of Excellence (MESD) to deepen Singapore's maritime R&D capabilities and position the country as a global maritime knowledge and innovation hub. Launched in October 2017, MESD is jointly funded by SMI and NTU.

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