



MEDIA RELEASE

Singapore, 27 July 2023 | For Immediate Release

Successful First Methanol Bunkering Operation in the Port of Singapore

Maersk and Hong Lam Marine Pte Ltd have successfully conducted the world's first ship-to-containership methanol bunkering operation of a Maersk's container vessel on 27 July 2023 at the Raffles Reserved Anchorage in Singapore, with the support of the Maritime and Port Authority of Singapore (MPA), government agencies and research institutes. This is also Singapore's first methanol bunkering operation.

2. Maersk's container vessel – the world's first container vessel sailing on green methanol¹ – was successfully refuelled with approximately 300 metric tonnes of bio-methanol via Hong Lam Marine's Singapore-registered tanker, *MT Agility*, for its onward maiden passage to Copenhagen. *MT Agility* had earlier taken bio-methanol stored at Vopak Terminals. The container vessel will be named in a ceremony in Copenhagen in September.

Thorough Preparations to Ensure Safety

3. In preparation for the methanol bunkering operation in Singapore, MPA worked with over 28 agencies, partners and institutes to organise table-top exercises (TTX) and workshops, before carrying out a Ground Deployment Exercise (GDX). The first TTX² was held during Singapore Maritime Week 2023 to identify safety measures and clarify roles and responsibilities for a coordinated cross-agency response to a methanol incident at sea. A separate Hazard Identification (HAZID) and Hazard and Operability Study (HAZOP) workshop³ was conducted to identify potential risks and develop corresponding prevention, control, and mitigation methods. These were further evaluated during a second TTX⁴ and a GDX at sea in July 2023 with various stakeholders and government agencies⁵. Customised methanol firefighting programme was also conducted by the Co-operative of SCDF

¹ Maersk defines 'green fuels' as fuels with low to very low GHG emissions over their life cycle compared to fossil fuels – Maersk [press release](#) dated 13 June 2023.

² The first TTX, held in April 2023, was attended by more than 80 representatives from 28 government agencies, industry stakeholders, and class societies.

³ Held in May 2023, the workshop involved more than 40 participants from methanol bunkering partners, industry stakeholder and relevant government agencies including American Bureau of Shipping, Hong Lam Marine Pte Ltd, Maersk Oil Trading, Mitsui & Co. Ltd., Mitsui & Co. Energy Trading Singapore Pte Ltd, Ministry of Home Affairs, Ministry of Manpower, National Environment Agency, and Singapore Civil Defence Force.

⁴ The second TTX, held in July 2023, was attended by more than 30 participants including methanol bunkering partners, and relevant government agencies such as National Environment Agency, Police Coast Guard, Public Utilities Board, Singapore Civil Defence Force, and Singapore Food Agency.

⁵ The GDX, held in July 2023, was attended by more than 50 participants from various government agencies and stakeholders involving 3 craft from MPA, 1 craft from Police Coast Guard, and 1 craft from Singapore Civil Defence Force.

Employees Ltd (COSEM) for MPA staff and Hong Lam Marine crew members as part of the preparations for the bunkering operation.

4. As part of the risk and environmental impact assessment for the methanol bunkering operation, MPA reviewed methanol-related incidents globally and worked with the Meteorological Service of Singapore to provide advance lightning risk warning if required. A methanol plume model was jointly developed by the Institute of High Performance Computing (IHPC), A*STAR, Tropical Marine Science Institute (TMSI), National University of Singapore, and the Technology Centre for Offshore and Marine, Singapore (TCOMS), to forecast the dispersion path of the methanol plume in an event of an accidental methanol release and guide operations. The model is a combination of dispersion in the air layer using computational fluid dynamics by IHPC, weather forecast and air quality modelling by TMSI, and plume dispersion in the sea via metocean modelling and prediction by TCOMS. During the methanol bunkering operation, researchers from the Cambridge Centre for Advanced Research and Education in Singapore flew drones equipped with methanol detector with plume modelling capabilities and infrared camera from MPA's patrol craft *MPA Guardian* to augment the detection of potential methanol leaks into the atmosphere and methanol flames in an event of an accidental leak. These novel capabilities will be further enhanced to support the review of responses to maritime incidents and raise the preparedness of seafarers, marine professionals, and the port ecosystem in Singapore as new marine fuels such as methanol are introduced.

5. A Technical Reference (TR) for methanol bunkering is being developed by MPA in consultation with the Standards Development Organisation at Singapore Chemical Industry Council (SDO@SCIC). The TR will cover the refuelling requirements, operational and safety requirements for delivery of methanol from a bunker tanker to receiving vessels, crew training and competency. Best practices learnt from this bunkering operation will also inform the development of specialised bunker vessels, mass flow meters, digital bunkering and other standards.

6. Aside from the development of the Technical Reference, MPA will continue to develop other operational and safety protocols, licensing requirements, training of seafarers and professionals, and study infrastructure needs such as terminal facilities and methanol carrying bunker tankers, to fully operationalise methanol bunkering. Learnings from the bunkering operation will also be presented to partners and international bodies such as the International Maritime Organization later this year to support the safe adoption of methanol as a marine fuel.

Milestone in Singapore's green shipping future

7. The successful completion of the methanol bunkering operation is a significant milestone for Singapore's development towards a multi-fuel future, and a testament to Singapore's commitment as the world's largest bunkering hub to meet the new marine fuel needs of international shipping through safe and efficient bunkering operations. More methanol bunkering operations are being planned in the coming year as methanol-enabled vessels are delivered globally.

8. Mr Teo Eng Dih, Chief Executive, MPA, said “The success of the methanol bunkering operation is a result of nearly a year’s preparations with various government agencies, research institutes, international collaborators, and industry to develop rigorous safety procedures through in-depth operational and risk assessments, modelling, and validation. This operation will help inform the development of the various standards, including the Technical Reference for methanol bunkering operations in Singapore, and guide our approach for future pilots and trials of new marine fuels. We thank A.P. Moller-Maersk, Hong Lam Marine, American Bureau of Shipping, Mitsui & Co., OCI Global, Stellar Shipmanagement and Vopak for their joint efforts with Singapore-based agencies in operationalising methanol bunkering capability and we welcome partners to work with us to accelerate maritime decarbonisation.”

9. Mr Morten Bo Christensen, Head of Energy Transition at A.P. Moller – Maersk, said “A.P. Moller - Maersk is excited to collaborate with the Maritime and Port Authority of Singapore, Mitsui & Co., American Bureau of Shipping and Hong Lam Marine on the maiden voyage of the world’s first container vessel sailing on green methanol. This journey is an important step in our efforts to reach net zero greenhouse gas emissions by 2040, as it will allow us to gain the necessary operational experience to operate the new engines and the fuel provided by OCI Global ahead of the arrival of our larger methanol-enabled vessels in the coming years.”

10. Mr Lim Teck Cheng, Executive Chairman, Hong Lam Marine, said “We are deeply honoured to be a part of Singapore’s first STS methanol bunkering. This goes with our absolute commitment to provide a safe and environmentally friendly option to decarbonise the marine industry in line with IMO’s GHG emissions targets. This remarkable achievement marks a milestone and demonstrates our commitment to sustainability and environmental responsibility, and we believe this will be a significant step in accelerating the development of methanol bunkering in Singapore. We would like to express our gratitude to our partners Maersk Oil Trading and the Maritime and Port Authority of Singapore for their collaboration and support in this endeavour. Together, we can make a positive difference for planet earth and a more sustainable future.”

11. Mr Panos Koutsourakis, Vice President, Global Sustainability, ABS, said “We are proud to have collaborated with Maersk, Mitsui, Hong Lam Marine and the MPA to develop the methanol bunkering safety procedures and checklists. This is an important advance on our industry’s sustainability journey, with a laser focus on safety. Green methanol holds significant promise to contribute to the decarbonisation of our industry and ABS has been leading the way by supporting its adoption. This vessel and her successors now on order are a vital step in creating more sustainable global supply chains.”

12. Mr. Takuya Shirai, the Chief Operating Officer of Mobility Business Unit II of Mitsui & Co. Ltd., said "We are extremely proud to be part of this epoch-making project from the very beginning. We believe that the success of this ship-to-ship methanol bunkering operation in the port of Singapore is only possible with the close collaborating partnership among A.P. Moller-Maersk, the American Bureau of Shipping, Hong Lam Marine, the Maritime and the Port Authority of Singapore and relevant supporters in this project. It represents a remarkable milestone to the journey towards the decarbonisation of global shipping. Through this project and other GHG reduction initiatives, Mitsui is committed to the realisation of a carbon neutral society."

13. Mr. Bashir Lebada, Chief Executive Officer, OCI Methanol / OCI HyFuels, said “We are very proud to be the vessel’s fuel partner, making the world’s first green methanol-fuelled container ship journey a reality. The successful bunkering operation in Singapore is a testament to the hard work of the MPA and all the involved parties, and this maiden voyage proves that we can achieve the marine industry’s global greenhouse gas emissions reduction targets using green methanol. Singapore will be an essential hub for us as we scale our green methanol and ammonia bunker business, and we look forward to working with our local partners there to accelerate the shift to cleaner fuels in shipping.”

14. Kelvin Kang, General Manager, Stellar Shipmanagement, said “Stellar Shipmanagement is delighted to be part of this HAZID/HAZOP and TTX discussion group for the methanol bunkering operation. These discussions are very important and helpful to our newbuilding methanol bunker tankers under construction currently, including layout, cargo handling, safety features as well as safe operation procedures. On behalf of our parent company Global Energy Group, we appreciate MPA’s continuous support to the bunkering industry in Singapore and the quest to make Singapore as the front runner in the development of the methanol bunkering.”

15. Rob Boudestijn, President, Business Unit Singapore, Vopak, said “We congratulate Singapore on this important milestone and are proud to be a partner in completing this methanol bunkering operation safely. As a reliable infrastructure provider for maritime bunkering over the past 40 years, we look forward to playing a leading role in enabling Singapore’s maritime decarbonisation journey in the multi-fuelled future.”

- End of Release -

Please click [HERE](#) for the videos and photos.

About Maritime and Port Authority of Singapore (MPA)

MPA was established on 2 February 1996 with the mission to develop Singapore as a premier global hub port and international maritime centre, and to advance and safeguard Singapore’s strategic maritime interests. MPA is the driving force behind Singapore’s port and maritime development, taking on the roles of port authority, maritime and port regulator and planner, international maritime centre champion, national maritime representative and a champion of digitalisation and decarbonisation efforts at regional and international fora such as at the International Maritime Organization. MPA partners industry, research community and other agencies to enhance safety, security and environmental protection in our waters, facilitate maritime and port operations and growth, expand the cluster of maritime ancillary services, and develops maritime digitalisation and decarbonisation policies and plans, R&D and manpower development. MPA is responsible for the overall development and growth of the maritime domain and Port of Singapore. In 2022, Singapore remained one of the world’s busiest transshipment hubs with a container throughput of 37.3 million 20-foot equivalent units (TEUs). For more information, please visit <https://www.mpa.gov.sg>

For media enquiries, please contact:

Mr Gerald Kheng

Communications and Community, Maritime and Port Authority of Singapore

Gerald_Kheng@mpa.gov.sg