

Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping

PRESS RELEASE

Industry Partners join forces to assess the technical-, financial- and environmental potential of converting existing vessels to zero carbon fuels and -technology as part of the transition to a global zero carbon fleet by 2050.

Copenhagen, 12 May 2021

American Bureau of Shipping, A.P. Moller – Maersk, MAN Energy Solutions, Mitsubishi Heavy Industries, NYK Line, Seaspans Corporation and Total are joining forces through the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping to assess the technical, financial and environmental potential of converting existing vessels to zero carbon fuels and -technology as part of the transition to a global zero carbon fleet by 2050.

The main purpose of the project is to assess conversion options and de-risk asset investments by analyzing the emission reduction potential as well as techno-economic opportunity of converting vessels currently fueled by fossil-based fuels to zero or neutral carbon fuel solutions. In addition, the project will identify a number of technical modifications of relevance for today's new buildings to reduce the cost of future conversions, thus minimizing the associated financial risk for ship owners.

The project partners will address various vessel types including container-, tankers- and bulk-carriers and their potential conversion from conventional fuel oil, or integration with more recent fuels such as LNG and LPG, to enable pathways with future solutions such as Ammonia or Methanol as well as the application of onboard Carbon Capture and Storage.

For each pathway, the related safety aspects will be reviewed, and the financial assessment will cover items such as conversion-, technology- and fuel costs as well as associated operating costs, whereas the environment assessment will, among other things, cover the Green House Gas reduction potential over the lifetime of a vessel.

The project is facilitated by the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping and fully funded by the involved parties. As Strategic Partners to the Center, the Partners have committed to the Center's collaboration model by which they assign experts to the Center as secondees working at the Center and with other partners through projects and activities.

"In order to accelerate the investments in a zero carbon maritime value chain, we have to reduce the risk of stranded assets. With this project, we address that challenge by providing clarity and overview of the operational fuel- and technology options, their associated environmental and financial impact as well as their transition pathways" – says Claus Winter Graugaard, Head of Onboard Vessel Solutions, the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping.

"This is a vitally important piece of work for the industry. We are assessing the opportunities and consequences of converting ships from fossil-based fuels to zero or neutral carbon fuel solution, which is something every ship owner and operator urgently needs actionable insight into. This project will turn the industry's decarbonization ambitions into a series of actionable steps, a pathway for each vessel type to carbon free operations," said Georgios Plevrakis, ABS Director, Global Sustainability.

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“To accelerate the transition to carbon-neutral or zero-carbon fuels, it is not enough to focus solely on newbuilt dual fuel vessels. We must also look into retrofitting existing vessels in our fleet to operate on carbon-neutral or zero-carbon fuels. With our participation in this project, we want to investigate retrofit possibilities for existing vessels enabling dual-fuel operation on either methanol or ammonia as well as conventional fuel oil,” says Ole Graa Jakobsen, Head of Fleet Technology, A.P. Moller – Maersk

“Through the long experience in developing high efficient and state of the art designed vessels, and also as a supplier of marine machineries equipped to more than 50% of existing deep sea vessels in the globe, we, MHI Group are very glad to contribute to global environment improvement not only for today’s urgent issues of EEXI and CII, but also decarbonization of existing vessels through this challenging ‘Conversion Optionality Study’ with the excellent partners.” said Tomoo Kuzu, Senior Executive Vice President of Mitsubishi Heavy Industries Marine Machinery & Equipment Co., Ltd.

Shipping’s road map to decarbonization

Global shipping accounts for around 3% of global carbon emissions, a share that is likely to increase as other industries tackle climate emissions in the coming decades.

Achieving the long-term target of decarbonization requires new fuel types and a systemic change within the industry. Shipping is a globally regulated industry, which provides an opportunity to secure broad-based industry adoption of new technology and fuels.

To accelerate the development of viable technologies a coordinated effort within applied research is needed across the entire supply chain. Industry leaders play a critical role in ensuring that laboratory research is successfully matured to scalable solutions matching the needs of industry. At the same time, new legislation will be required to enable the transition towards decarbonization.

About American Bureau of Shipping (ABS)

ABS, a leading global provider of classification and technical advisory services to the marine and offshore industries, is committed to setting standards for safety and excellence in design and construction. Focused on safe and practical application of advanced technologies and digital solutions, ABS works with industry and clients to develop accurate and cost-effective compliance, optimized performance and operational efficiency for marine and offshore assets.

About A.P. Moller – Maersk

A.P. Moller - Maersk is an integrated container logistics company working to connect and simplify its customers’ supply chains. As the global leader in shipping services, the company operates in 130 countries and employs around 80,000 people.

About MAN Energy Solutions

MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow’s challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies. Headquartered in Germany, MAN Energy Solutions employs some 14,000 people at over 120 sites globally. Our after-sales brand, MAN PrimeServ, offers a vast network of service centres to our customers all over the world.

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About Mitsubishi Heavy Industries

Mitsubishi Heavy Industries (MHI) Group is one of the world's leading industrial groups, spanning energy, logistics & infrastructure, industrial machinery, aerospace and defense. MHI Group combines cutting-edge technology with deep experience to deliver innovative, integrated solutions that help to realize a carbon neutral world, improve the quality of life and ensure a safer world. For more information, please visit www.mhi.com or follow our insights and stories on www.spectra.mhi.com.

About NYK Line

Nippon Yusen Kabushiki Kaisha (NYK) was founded in 1885 and is one of the world's leading transportation companies. At the end of March 2020, the NYK Group was operating 784 major ocean vessels, as well as fleets of planes and trucks. The NYK Group is based in Tokyo, employs about 35,000 people worldwide, and has regional headquarters in London, New York / New Jersey, Singapore, and Shanghai. On February 3 2021, NYK announced the NYK Group ESG Story, which aims to further integrate ESG into the company's management strategy. In order to continue to be a corporate group that remains essential to society and industry, the NYK Group aims to be a sustainable solution provider that creates new value while maximizing profits and achieving social and environmental sustainability from a long-term perspective.

For more information go to www.nyk.com

About Seaspan Corporation

Seaspan Corporation is the leading independent owner, operator and manager of containerships, providing high-quality, modern vessels with best-in-class operations and innovative ship design. Seaspan's fully-delivered fleet consists of 168 containerships representing total capacity of approximately 1,670,200 TEU, which includes ten 15,000 TEU dual-fuel LNG containership newbuilds announced February 12, 2021.

About Total

Total is a broad energy company that produces and markets fuels, natural gas and electricity. Our 100,000 employees are committed to better energy that is more affordable, more reliable, cleaner and accessible to as many people as possible. Active in more than 130 countries, our ambition is to become the responsible energy major.

About the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping

The Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping is a not-for-profit, independent research and development center, it works across the shipping sector with industry, academia and authorities. A highly specialized, cross-disciplinary team collaborate with partners globally to create overview of viable decarbonization pathways, facilitate the development and implementation of new technologies; build confidence in new concepts and their supply chains; and accelerate the transition by defining and maturing viable strategic pathways to the required systemic change.

The center is made possible by a start-up donation of DKK 400m by the A.P. Møller Foundation and legally established in October 2020.

The Center is based in Copenhagen but work with partners globally.

For more information go to www.zerocarbonshipping.com

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