

# Methanol Fuelled Vessels on the Water and on the Way

To learn more about each project, click on the project title.

## **Brazil (December 2022)**

Caterpillar has signed an MOU that will support Brazil's Wilson Sons with the adoption of tugboat and offshore vessel powertrain technologies and services that enable the fulfillment of emissions reduction and decarbonization in towage offshore operations.

## **S. Korea (November 2022)**

Ulsan Port Authority signed an MOU with the international classification society Korean Register (KR) to support methanol-fueled ships and establish the South Korean port as a low-carbon energy hub.

## **USA (November 2022)**

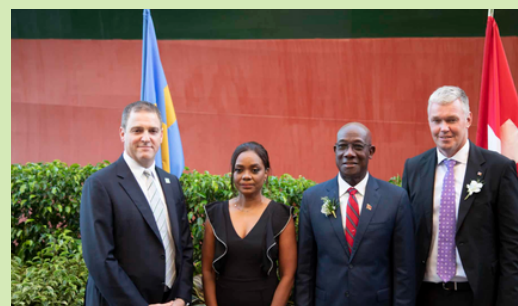
Maritime Partners Orders RIX Industries' M2H2 Reformers for the World's First Methanol/Hydrogen Fuel Cell-Powered Towboat

## **Trinidad and Tobago (November 2022):**

Proman Stena Bulk Ltd formally named its first state-of-the-art newbuild IMOII MeMAX methanol-fuelled 49,900 DWT vessel, Stena Pro Patria, the first of three methanol-fuelled vessels delivered in 2022

## **China (November 2022)**

Terntank has placed an order at China Merchants Jinling Shipyard in Yangzhou for the construction of up to four battery hybrid 15,000 dwt ships that will be methanol-ready



**China (November 2022)**

China State Shipbuilding Corporation started the first committee meeting of a 'special' project to develop marine engines capable of utilizing methanol, ammonia, and hydrogen as bunker fuel.

**USA (November 2022)**

Disney Cruise Line acquired the cruise ship Global Dream, currently under construction at German shipyard Meyer Werft, which will be one of the first in the cruise industry to be powered by methanol, expected in 2025.

**Norway (November 2022)**

Cecon Contracting entered an agreement for the construction of a cable installation vessel that will feature a methanol dual fuel system and a battery pack, expected in the first quarter of 2025.

**Germany (November 2021):**

Alfred Wegener Institute took delivery of a new research vessel UTHORN, built by Shipyard Fassmer, and is the first vessel in Germany to be powered by methanol.

**France (November 2022)**

CMA CGM plans to double its order for methanol-fuelled container ships from China with six more 15,000 TEU methanol-powered boxships, bringing total methanol orders to 12 ships.



### **Sweden (November 2022)**

OljOla is working with Stena Oil and Stena Teknik in a new joint venture for an oil and chemical tanker designed to become one of the first dedicated vessels for methanol bunkering to supply the market in the North European region.

### **China (November 2022)**

Guangzhou Shipyard International Co Ltd (GSI) has delivered the third IMOII MeMAX dual-fuel MR tanker powered by methanol, Stena Promise, to Proman Stena Bulk, a joint venture (JV) between methanol producer Proman and Stena Bulk.

### **Singapore (November 2022)**

Global Energy Trading and Stellar Ship Management Services have entered into an agreement for the construction of a methanol bunkering ship for Singapore.

### **China (November 2022)**

Orient Overseas Container Line Ltd. (OOCL) announced a newbuilding order of seven methanol-compatible 24,000 TEU container vessels with expected delivery starting from the third quarter of 2026.

### **Denmark (October 2022)**

Maersk orders six additional methanol-fueled vessels to ABS Class built by Hyundai Heavy Industries, approx. 17,000 TEU, bringing their total methanol orders to 19 ships.





### **China (October 2022)**

Alibaba-linked Transfar Shipping is targeting orders for a series of 8,000-teu newbuildings with an eye on making them methanol dual-fuel.

### **China (October 2022)**

China Shipbuilding Hengyu Energy has completed the bunkering of three methanol-powered Proman Stena product tankers built by Guangzhou Shipyard International.

### **USA (October 2022)**

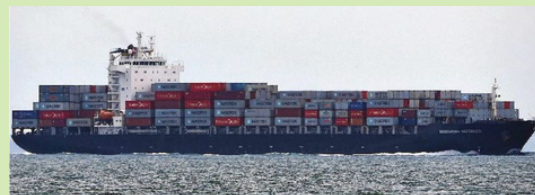
Norwegian Cruise Line Holdings has decided to pursue methanol while implementing interim steps on its in-service cruise ships with retrofit of medium-speed MAN Energy Solutions engine to run on methanol dual-fuel.

### **Greece (October 2022)**

Atlantic Bulk Carriers (ABC) has opted for methanol with future newbuildings to be readied for that technology,

### **Belgium (October 2022)**

Euronav has ordered two new eco-friendly Suezmax tankers from South Korean shipbuilding firm Daehan Shipbuilding Co. to be ammonia/methanol ready.





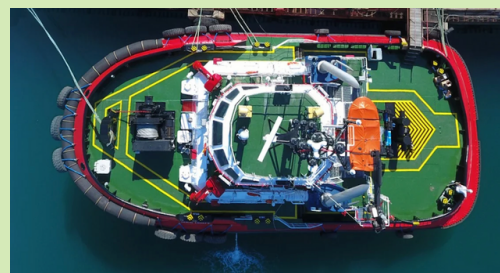
### **China (October 2022)**

COSCO SHIPPING Holdings ordered 12 24,000 TEU methanol dual-fuel powered container ships with a total price of \$2.87 billion.



### **Turkey (September 2022)**

RINA has granted approval in principle (AiP) for a methanol dual fuel tugboat designed by Turkish shipbuilding company Med Marine.



### **USA (September 2022)**

Glosten and ABB have teamed to develop a methanol-hybrid ship assist tug design.



### **New Zealand's (September 2022)**

MOVE Logistics Group (MOVE) is pressing ahead with a landmark order for a methanol-capable ro-ro for the country's coastal trades.



### **China (September 2022)**

China Shipbuilding Industry Trading Co., Ltd., a subsidiary of China State Shipbuilding Corporation, signed a contract with Mediterranean Shipping, Det Norske Veritas (DNV), WinGD and China Marine and Offshore Engineering Design and Research Institute (MARIC) for methanol dual-fuel powered container ship project.



## **Germany (September 2022)**

Freudenberg e-Power Systems has reported that the classification society RINA has granted Type Approval for its methanol-powered fuel cell system.

## **Italy (September 2022)**

Sanlorenzo signs partnership with Rolls-Royce to develop first methanol propulsion system on a superyacht due for delivery in 2026.

## **China (September 2022)**

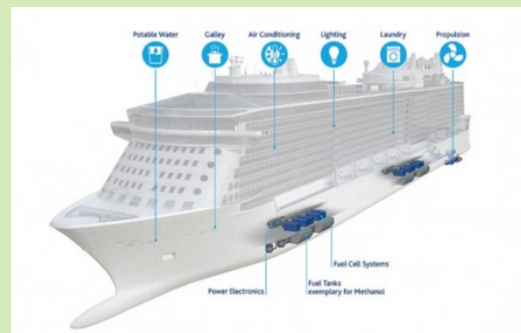
ABS grants AIP to CSSC Qingdao Beihai Shipbuilding CO., LTD and China Ship Design & Research Center Co., Ltd (CSDC) for the world's first methanol-powered Newcastlemax bulk carrier.

## **China (September 2022)**

ContiOcean Environment Technology has inked a marine methanol fuel supply system contract with a well-known but undisclosed marine power solutions company.

## **Norway (September 2022)**

Ocean Residences announces the M/Y Njord will be the first residential superyacht to run on e-methanol and bio-methanol to access Norway's environmentally sensitive fjords.

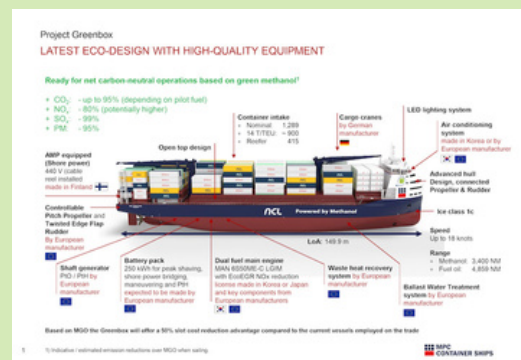


## **Norway (August 2022)**

Topeka, the Wilhelmsen-owned zero-emission shipping company, launches two carbon-neutral, methanol-fuelled container newbuilds serving Norway to European markets.

## **Norway (August 2022)**

MPC Container Ships has announced that it is partnering with North Sea Container Line (NCL) and materials producer Elkem on an order for two 1,300 TEU 'carbon neutral' methanol-powered container ships.



## **Sweden (August 2022)**

Alfa Laval FCM Methanol was chosen as the fuel supply system for six methanol-fuelled container vessels ordered for X-Press Feeders.



## **China (July 2022)**

Proman Stena Bulk announces its second methanol-powered newbuild tanker, Stena Pro Marine, was delivered.



## **Norway (July 2022)**

Ocean Yield purchases second 5,500 TEU capacity methanol-ready containership newbuilding for long-term charter to Israeli carrier ZIM, expected in May 2023.





**France (June 2022)**

CMA CGM has ordered a total of six 15,000 TEU dual-fuel methanol-powered containerships from an unnamed shipbuilder. The newbuilds are planned to join the CMA CGM fleet by the end of 2025.

**USA (June 2022)**

Advent Technologies Holdings, Inc. has signed a Memorandum of Understanding (MoU) with Laskaridis Shipping Company Ltd. to jointly conduct a pilot program using methanol fuel cells for auxiliary power on dry bulk vessels.

**Denmark (June 2022)**

Blue World Technologies and Tuco Marine have entered a partnership to develop methanol fuel cell-powered workboats.

**Japan (June 2022)**

Ocean Network Express (ONE) has signed shipbuilding contracts with both Hyundai Heavy Industries and Nihon Shipyard to construct five 13,700 TEU vessels each, all for delivery in 2025.

**Brazil (June 2022)**

Brazilian mining giant Vale has approached shipyards in China for quotes on 14 newbuildings 300,000-dwt VLOCs, no fuel choice yet by enquires for LNG and methanol dual-fuel vessels.



### **USA (May 2022)**

e1 Marine M-series methanol to hydrogen generator has received Approval in Principle (AiP) for marine applications from class society Lloyd's Register.

### **Canada (May 2022)**

Uzmar and Robert Allan sign an agreement to design and build a new series of methanol-fuelled tugboats.

### **Sweden (May 2022)**

Alfa Laval's FCM Methanol low-flashpoint supply system proven over 100,000 hours of operation.

### **USA (April 2022)**

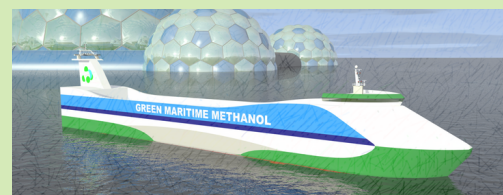
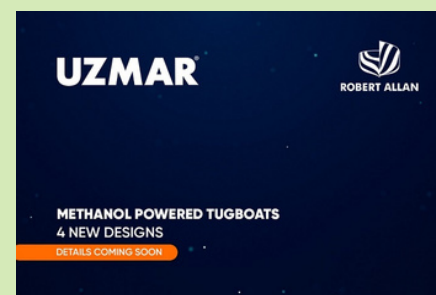
Caterpillar Marine joins the Green Maritime Methanol consortium to achieve carbon reduction through methanol in the maritime industry.

### **USA (April 2022)**

Caterpillar Marine announces additional development of alternative fuels with an investment in methanol engine technologies.

### **Denmark (April 2022)**

Ørsted teams with Esvagt to build the world's first service operation vessel (SOV) methanol-powered. The SOV will be powered by batteries and dual-fuel methanol engines.



## **Denmark (March 2022).**

Danish municipality replacing diesel engines with methanol fuel cells from Advent Technologies in Margrete Laesø ferry launching 2024-2025.

## **Netherlands (2022).**

Citing market demand, MAN Energy Solutions has designed three new engines for methanol operation, giving ship owners the choice between seven engines and five bore sizes designed to run on methanol fuel.

## **Japan (March 2022):**

Mitsui O.S.K. Lines (MOL) and five partners form an alliance to develop Japan's first domestic methanol-fueled tanker in 2024.

## **Greece/China (March 2022):**

Danaos has placed orders for two 7,100 TEU containerships that will be methanol fuels ready to be built at Dalian Shipbuilding for delivery in 2024.

## **Finland (March 2022).**

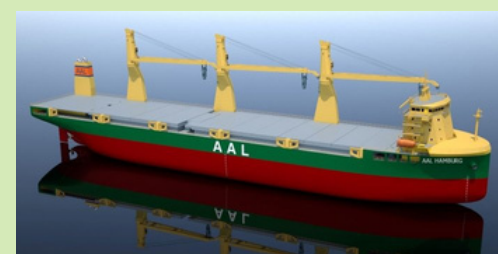
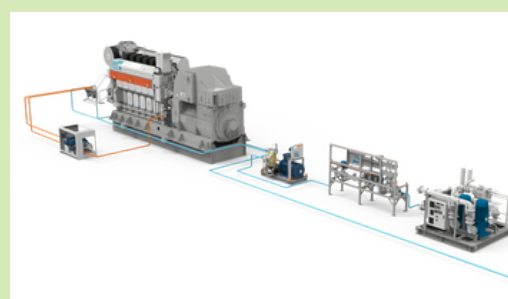
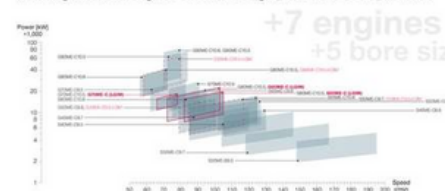
Wärtsilä develops MethanolPac, combined with the Wärtsilä 32 Methanol engines to deliver methanol-capable fuel and power systems across a wide range of vessel segments.

## **Singapore (Feb 2022).**

AAL Shipping increases its order for dual-fuel, methanol-ready multipurpose vessels from four to six 32,000 DWT Ships.



**MAN B&W two-stroke portfolio**  
including methanol engines of which design plans have been published





## **Netherlands (Q2 2022):**

Damen Shipyards delivering first “methatug” to Port of Antwerp in 2022 also part of FASTWATER project.

## **China (Feb 2022):**

COSCO SHIPPING and CSSC Dalian Shipbuilding Industry have onw AIP certification by class societies DNV and CCS for the design of methanol fuel-powered 310,000 DWT very large crude carrier (VLCC) ship design.

## **Netherlands/China (Jan 2022):**

Van Oord has ordered a self-elevating offshore installation vessel being built at Yantai CIMC Raffles shipyard and running on five Wärtsilä 32 methanol engines for delivery in 2024.

## **Spain (Jan 2022):**

Ferry operator Baleària building its first electric passenger and cargo ferry that will serve as testbed for the use of methanol fuel.

## **Singapore (Jan 2022):**

Class society ABS, SDTR Marine, and Shanghai Merchant Ship Design & Research Institute (SDARI) have designed an innovative methanol-fueled dry bulk carrier based on neo-Panamas 85,000 DWT vessel.

## **Germany (Jan 2022):**

Rolls-Royce business unit Power Systems is working on mtu 4-stroke engines for use with methanol planned to be available as soon as possible for use in commercial ships and yachts.





## **Netherlands (Jan 2022):**

System integrators Bakker Sliedrecht and RH Marine with the Fugro-led consortium MENENS (Methanol as Energy Step Towards Emission-Free Dutch Shipping) are developing a new electrical system to enable vessels to sail on methanol.

## **United States (Jan 2022):**

e1 Marine and Maritime Partners to launch world's first methanol-fueled towboat in 2023.

## **Sweden (Dec 2021):**

Swedish Maritime Administration launch pilot boat using Scania engine modified for methanol in 2021 as part of FASTWATER project.

## **Germany (Dec 2021):**

Lürssen Yachts displays "ALICE" a climate-neutral yacht model using methanol fuels cells to replace conventional diesel generators.

## **Netherlands (Dec 2021):**

The Fugro-led consortium MENENS (Methanol as Energy Step Towards Emission-Free Dutch Shipping) awarded a grant from the Dutch government to convert the Fugro Pioneer survey vessel to run on methanol by the beginning of 2023.

## **Sweden (Dec 2021):**

Class society ABS grants Alfa Laval the first marine approval for operating boilers on methanol.





### **Korea (Dec 2021):**

Class society ABS provides approval in principle to K Shipbuilding for a methanol fuel-ready medium range tanker design.

### **Singapore (Dec 2021):**

X-Press Feeders Group commissioned 16 1,170 TEU container ships with options for more featuring dual-fuel methanol engines for delivery in 2023/2024 to operate in European and American trade routes.

### **Germany (Nov 2021):**

MAN Energy Solutions upgrading four-stroke engines to run on methanol and other future fuels.

### **Switzerland (Nov 2021):**

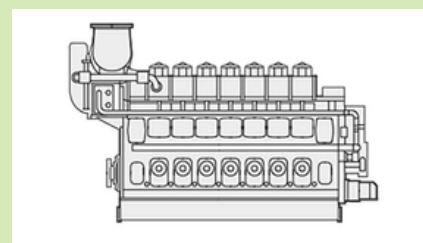
Swiss engine designed WinGD (Winterthur Gas & Diesel) projecting that methanol-fueled four-stroke engines will be available by 2024.

### **Denmark (Nov 2021):**

Svitzer, AP Moller, Maersk's world-leading towage operator unveils plans to introduce world's first methanol fuel cell tug boat to enter operation by Q1 2024.

### **Sweden/Switzerland/China (Oct 2021):**

Proman Stena Bulk - a joint venture of shipowner Stena Bulk and Proman Shipping a subsidiary of methanol producer Proman - building six 50,000 dwt tankers at Guangzhou Shipyard International with methanol dual-fuel engines first deliveries 2022.





### **Canada (Oct 2021):**

Naval architecture firm Robert Allan Ltd unveils methanol-fueled Raptor 2400 crew transfer vessel.



### **Japan (Sept 2021):**

Japanese shipowner Mitsui OSK Lines (MOL), Marubeni Corporation, and the Ministry of the Russian Federation for Development of the Far East and the Arctic Regions are conducting a joint study to build, operate, and utilize a dual-fuel methanol chemical tanker.



### **United Kingdom (Jul 2021):**

UK-based shipping consultancy Drewry expects half of the vessels ordered after 2025 to have dual-fuel engines, with a large percentage using methanol as a marine fuel.



### **Germany (Jul 2021):**

Port of Emden to receive new, methanol-powered harbor boat.



### **Ukraine (Apr 2021):**

Danube Shipping Company orders up to 33 river pushers using Anglo Belgian Corporation 'hybrid' engines with methanol/hydrogen capability.



### **Netherlands (Mar 2021):**

OCI NV, MAN, Eastern Pacific Shipping first methanol retrofit by 2023, newbuilds and retrofits.

### **Netherlands (Mar 2021):**

Van Oord deploys FUELSAVE hydrogen/methanol system on subsea rock installation vessel Bravenes.

### **Japan (Mar 2021):**

Sumitomo Heavy wins Approval in Principle from Class NKK for methanol dual-fuel tanker.

### **Denmark (Feb/Aug 2021):**

Maersk orders one 2,100 teu methanol dual-fuel container ship (2023), and eight 16,000 teu vessels exercising option for four additional methanol-fueled ships (2024-2025).

### **Germany (Jan 2021):**

AIDAnova will employ methanol fuel cells for propulsion under the Pa-X-ell2 project.

### **Singapore (Dec 2020):**

Hyundai Mipo Dockyard, MAN Energy Solutions, DNV GL, and the Methanol Institute unveil standard design for methanol-fuelled product tanker with building costs 10% higher than a standard vessel, but less than the 22% higher costs for an LNG-dual fuel vessel.



### **Germany (Jan 2020):**

Shipowner Liberty One has ordered a new multipurpose (MPP) ship powered by methanol.

### **Netherlands (Jan 2020):**

Damen Shipyards has developed a new concept Offshore Support Vessel (OSV) to operate on methanol.

### **Germany (Mar 2019):**

Abeking & Rasmussen shipyard designing "green cruise" concept vessel using methanol fuel cells for hotel load and methanol propulsion engines.

### **Germany (Jul 2018):**

Shipowner SAL Heavy Lift to install FUELSAVE hydrogen/methanol injection system in 6 vessels.

### **Canada (2016-2019):**

Methanex Waterfront Shipping and their partner vessel operators - Mitsui OSK Lines, Westfal-Larsen, Marininvest, IINO, and NYK Group - began operating a fleet of 11 50,000 dwt chemical tankers with dual-fuel methanol engines.

### **Sweden (2015):**

One of the world's largest ropax ferries - Stena Germanica - has been operating on methanol fuel since 2015.

