

# Methanol-fueled vessels mark one year of safe, reliable, and efficient operations



→ **April 2017 marks one-year** since Waterfront Shipping (WFS) welcomed seven of the world's first ocean-going vessels capable of running on methanol into its fleet. The first three vessels were delivered in April and the remaining four later in 2016.

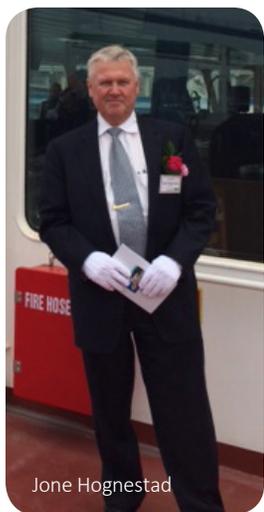
These innovative vessels have achieved accolades from the marine industry for their use of clean-burning methanol as an alternative marine fuel. Over the past year, the seven 50,000 dead weight tonne methanol tankers – powered by two-stroke dual-fuel engines capable of running on methanol, fuel oil, marine diesel oil or gas oil – have been operating safely and reliably across the globe.

**WFS invited three shipping companies**, Marinvest/Skagerack Invest (Marinvest), Mitsui O.S.K. Lines, Ltd. (MOL), and Westfal-Larsen Management (WL) to collaborate on the project and in December 2013 announced plans to commission these dual-fuel vessels. Shipping partners, engine manufacturer, MAN Diesel and Turbo SE, and the two shipyards building the vessels, Hyundai Mipo Dockyard in Korea and Minaminippon in Japan worked closely to bring this innovative commitment to life. Since then, it has demonstrated and verified the potential to move the shipping industry forward.



*As we were evaluating our investment in this technology and having the Leikanger and Lindanger built with an engine that can run on a fuel such as methanol, it was important that we assessed its adaptability and use. Now with our vessels in operation and in the waters, we have found methanol to be one of the best alternative fuels due to its wide availability, the use of existing infrastructure, and the simplicity of the engine design and ship technology. Methanol shares similar characteristics with other marine fuels with respect to storage and handling and can even be bunkered by trucks if required. Using methanol as a marine fuel is a feasible and practical solution that supports the shipping industry and regulatory requirements. With the recent announcement by IMO for a global 0.5% sulfur cap for vessels worldwide effective 2020, methanol will soon be one of the very few fuel alternatives to MGO that can be utilized by existing modern vessels after relatively minor and cost effective retro-fit modifications compared to, for instance, LNG.*

– Rolf Westfal-Larsen Jr., CEO Westfal-Larsen Management



Jone Hognestad

“It has been exciting working with our shipping partners over the last few years to advance this new, clean technology,” says Jone Hognestad, former President of Waterfront Shipping, who retired in March 2017. “Investing in methanol-based marine fuel is an important step in the right direction and reinforces our commitment to sustainable proven technology that provides environmental benefits and meets emission regulations.”

“In 2012, we were looking to renew part of our fleet as time charter vessel contracts naturally expired and to add new vessels to the fleet to meet increased product transportation needs. As an innovative and leading global marine transportation company and a wholly owned subsidiary of Methanex Corporation, the world's largest producer and supplier of methanol, it was only natural that we investigated methanol as a future fuel for our vessels”, states Jone.

In April 2017, Marininvest celebrated two of its vessels together attaining over 3,000 hours running on clean-burning methanol, and estimated that the use of methanol rather than conventional marine fuel had prevented more than 80,000 kilograms of sulphur oxide emissions. Results like this speak to the environmental benefits of using methanol as an alternative marine fuel by significantly reducing the emissions of sulphur oxides, nitrogen oxides and particulate matter.

"Tests in blending water with methanol also show promising results in terms of meeting the International Maritime Organization's NOx Tier III requirements. Such a new Tier III solution could become a game changer. Further tests are scheduled in the near future to conclude if this could be a new way forward," states René Sejer Laursen, Sales & Promotion Manager, MAN Diesel & Turbo.



*Investing in technology that encourages the use of a fuel like methanol that significantly reduces emissions is a step forward for both our company and the shipping industry. This is the reason we were very pleased to partner with Waterfront Shipping and others to have three of our vessels -- Cajun Sun, Taranaki Sun and Manchac Sun-- built with the first of its kind MAN dual-fuel technology.*

– Akio Mitsuta, Senior Managing Executive Officer, Mitsui O.S.K. Lines, Ltd.



*We are proud to invest and have two of our JV vessels, Mari Jone and Mari Boyle, built with the first-of-its kind MAN B&W ME-LGI two-stroke dual-fuel engine. Our overall focus in the development of the dual-fuel system concept has been safety and engine reliability. We have found the technology for handling methanol is well developed and offers a safe dual-fuel solution for low-flashpoint liquid fuels. Safety measures include all methanol fuel equipment and distribution systems double-walled and ventilated with dry air, ensuring there is no direct contact with methanol and safe for operators and engineers. Any operational switch between methanol and other fuels is seamless and records a slightly better efficiency compared to conventional HFO-burning engines. Our vessels have regularly been running on methanol and we foresee this continuing going forward.*

– Patrik Mossberg, Chairman, Marininvest/Skagerack Invest

**With the growing demand for cleaner marine fuel,** methanol is a promising alternative marine fuel and helps the shipping industry meet increasingly strict emissions regulations with relatively minor and cost-effective modifications to existing vessels.

- **April 2016:**
  - Waterfront Shipping, Marininvest, MOL and WL announce the industry welcoming the world's first ocean-going vessels capable of running on methanol
  - Delivery of the first three Korean and Japanese built methanol-fueled ocean tankers, Lindanger, Mari Jone and Taranaki Sun.
- **June 2016:** WFS and WL welcome shipping vessel, Leikanger
- **August 2016:** WFS and Marininvest welcome shipping vessel, Mari Boyle
- **September 2016:** Lloyd's List Global Awards 2016 honours WFS a designation for Highly Commended in the Company of the Year category for its leadership and investment in innovation within the shipping industry
- **September 2016:** WFS and MOL welcome shipping vessel, Manchac Sun
- **October 2016:** International Maritime Organization's announcement of a 0.5 per cent global sulphur cap on marine fuel as of January 1, 2020
- **November 2016:** WFS and MOL welcome shipping vessel, Cajun Sun
- **December 2016:** WL's Lindanger, one of the world's first methanol-fueled tanker in operation, was recognized by Maritime Reporter & Engineering News as one of 2016's 10 Great Ships
- **February 2017:** The Naval Architect magazine recognizes MOL's Manchac Sun and WL's Lindanger as the remarkable vessels delivered in 2016
- **April 2017:** Marininvest celebrates two of its vessels together attaining over 3,000 hours running on clean-burning methanol