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## **MAN Energy Solutions Wins Order for Battery-Hybrid Dual-Fuel System**

### **Canadian ferry operator chooses integrated MAN solution**

The Damen Gorinchem Holland shipyard has ordered a hybrid-propulsion solution from MAN Energy Solutions in connection with the building of 2 x dual-fuel/hybrid RoRo ferries for Canadian outfit, Seaspan Ferries Corporation. The order covers the provision of MAN 35/44DF dual-fuel engines, fuel gas-supply systems and the main electric systems, including batteries.

MAN Energy Solutions will provide the solutions in association with Aspin Kemp & Associates (AKA), in which it has a 40% stake. AKA specialises in power supply, energy management and drive systems for marine and industrial applications.

Similarly, MAN Energy Solutions' fuel-gas specialist, MAN Cryo, has been charged with supplying the new ferries' fuel gas-supply system. MAN Cryo offers systems for the storage, distribution and handling of liquefied gases and was fully integrated into the company in 2015.

Wayne Jones OBE – Chief Sales Officer and Member of the Executive Board, MAN Energy Solutions – said: “We are very pleased to have won this order, and that our case was compelling enough for the customer to change an existing technical specification to our favour. It really showcases our strategic direction of developing sustainable technologies and solutions, and how we have expanded our business in recent years. This is a move that is now paying off as evidenced by the key roles that AKA and MAN Cryo play in this significant order.”

Jones concluded: “System technologies that help our customers to increase the efficiency of their plants and reduce emissions already form a significant part of our business, and also lead the way to a carbon-neutral future. The Seaspan order also fulfills our desire to increasingly become a supplier of complete solutions.”

Jason Aspin – CEO of Aspin Kemp & Associates – added: “This order represents a strategic milestone for AKA due to many factors. First off, it showcases the successful MAN and AKA partnership, offering highly innovative, full turn-key systems to operators. Secondly, it is a great opportunity for AKA's technologies to be deployed in our backyard in Canada with a leading and forward-thinking owner like Seaspan. And lastly, with a technology where AKA has been a first mover in several initiatives for over a decade, this demonstrates that the marine industry is opening to the value that hybrid systems provide in meeting their environmental reduction targets while at the same time reducing their operating costs. We are very excited to see this project kick into full gear and look forward to participating in a successful outcome for all stakeholders!”.

## Project background

Having initially been minded to build repeats from the existing LNG ferries, MAN Energy Solutions – courtesy of a live performance of its MAN 35/44DF engine – demonstrated that a fully-integrated MAN solution could better fulfill the owner's requirements.

MAN Energy Solutions' scope of supply for each shipset comprises:

- 2 x MAN 9L35/44DF Diesel/Gas-electric propulsion system
- 1 x MAN Cryo Fuel Gas Supply System including a 209m<sup>3</sup> tank
- 1 x AKA main electrical system
- 1 x AKA 2-MWh energy storage systems
- 1 x AKA low voltage distribution system .

## System characteristics

The MAN hybrid-system solution in combination with a fully integrated MAN Cryo FGSS that is perfectly adjusted to the engines gas-flow requirements, offers reliable operation in gas mode – especially in view of the ferry segment's typical frequent and high load-fluctuations – and even with low methane numbers. For Seaspan, it was essential to avoid any diesel operation due to environmental and ecological reasons.

High system efficiency and the lowest emissions will also be achieved by having just one of two DF engines online at a time and at high load. Being able to operate with a one engine-online-concept facilitates significant savings in terms of vessels fuel costs, running hours and therefore spare parts/maintenance costs.

The propulsion and battery hybrid system, deeply integrated by AKA, provides sufficient propulsion power in all operational modes to serve Seaspan's requirements to maintain its routes on time, fuel-efficiently, and with a minimal carbon footprint.

Additional AKA hybrid features for this project include peak shaving under rough conditions and maneuvering, enhanced dynamic support during ship acceleration, and zero-emissions operation at the terminal. MAN Energy Solutions will provide Seaspan a ready-for-the-future solution in view of the ecological and economical demands for its fleet-replacement programme and Seaspan's future successful business.

## The Maritime Energy Transition

The new Seaspan order is part of the 'Maritime Energy Transition', an umbrella term that covers all MAN Energy Solutions activities in regard to supporting a climate-neutral shipping industry.

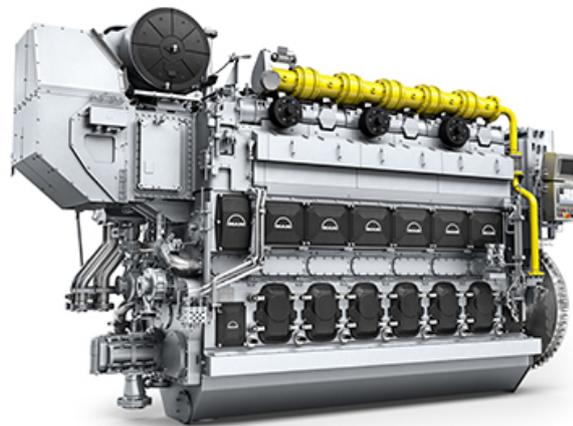
The term stems from the German expression 'Energiewende' and encapsulates MAN Energy Solutions' call to action to reduce emissions and, among other initiatives, establish natural gases as the fuels of choice in global shipping.

Launched in 2016 after COP 21, the initiative has since found broad support within the shipping industry and politics.

### **About Seaspans Ferries**

With over one hundred years of marine-transportation experience, Seaspans Ferries operates a 'drop trailer' service eliminating the costs associated with tractors and drivers accompanying trailers during transit to or from Vancouver Island.

Seaspans Ferries provides daily scheduled sailings through three roll-on/roll-off, self-propelled vessels, and four articulated tug-and-barge units.



*The MAN 35/44DF engine*



*Graphical rendering from the port side of the new RoRo design (picture courtesy Seaspan)*

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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.