



# PROJECT FORWARD®



A JOINT DEVELOPMENT PROJECT TO PROMOTE LNG AS FUEL FOR CARGO SHIPS  
WITH THE LEADERSHIP OF ARISTA SHIPPING

## PRESS RELEASE

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## ENIRAM SIGNS MOU TO PARTICIPATE IN FORWARD SHIPS' NEW GENERATION BULK CARRIERS

Eniram, a Wärtsilä company, has signed a Memorandum of Understanding (MoU) with Athens-based FORWARD SHIPS to participate in the Project Forward initiative, which is led by Arista Shipping and its newly formed FORWARD MARITIME GROUP INC. The project has developed an 84,000t DWT dry bulk carrier vessel that features an unprecedented high level of energy efficiency. The carrier's design is based on LNG fuelled propulsion. Eniram's contribution will be to assist in the development of monitoring and optimisation tools for FORWARD SHIPS.

The selection of Eniram to participate was based on its strong track record and in-house competences in the utilisation of ship data and modelling to provide accurate recommendations for improving efficiency. The vessel design will enable compliance with all known, applicable, and anticipated regulations proposed by the International Maritime Organization (IMO). These include the Energy Efficiency Design Index 2025, SOx post 2020, and NOx Tier III without any after treatment.

"We are delighted to be a part of this exciting project, which will create a vessel with the levels of performance and sustainability needed as the marine industry enters a new era. Our input will help ensure that operational visibility will be maximised, and that the new ships can operate at optimal efficiency," says Giannis Moraitakis, E&A Business & Sales Development Manager, Wärtsilä Marine Solutions.

"Project Forward represents a milestone for the shipping industry, since it brings a substantial discontinuity to traditional ship design and performance. The project establishes LNG as a global marine fuel, and we welcome Eniram's involvement. They have proven expertise in energy management technology, and this know-how will be of great importance. The aim of the project is to arrive at a fully elaborated decision support tool, which will be extremely valuable in enabling us to predict, monitor, optimise, and also demonstrate the actual performance of the vessels," says Antonis Trakakis, Chief Technology Officer, Forward Ships.

Wärtsilä is also a part of the project team because of its experience and leading technologies in LNG propulsion. The propulsion design concept is to be based on a novel arrangement featuring just two highly efficient Wärtsilä 31DF dual-fuel engines without additional gensets. Other parties involved include Finnish ship designer Deltamarin, the Houston-based classification society American Bureau of Shipping (ABS), GTT, the French LNG membrane containment system designer, and Shell, Shell Western LNG B.V., a leading supplier of LNG Marine Fuel.

Forward Maritime Group Inc. has signed a Letter of Intent with Yangzijiang Shipbuilding (YZJ) to build a series of up to 20 bulk carriers to the new design.

Accompanying photo: the Forward Bulker 84-LNG

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**About Eniram:**

Established in 2005, Eniram was acquired by Wärtsilä Corporation in July 2016. The company provides the marine industry with leading insights for asset, operations, and commercial shipping management. The Eniram Insight Factory gives decision-making support for its partners based on real time data collection, statistical modeling, and predictive simulations. Our mission is to maximize the efficiency of the industry through digital insights, saving costs and maximizing overall profitability, while cutting the emissions harmful to our environment.

[www.eniram.fi](http://www.eniram.fi)

**Wärtsilä in brief:**

Wärtsilä is a global leader in smart technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation, total efficiency and data analytics, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers. In 2017, Wärtsilä's net sales totalled EUR 4.9 billion with approximately 18,000 employees. The company has operations in over 200 locations in more than 80 countries around the world. Wärtsilä is listed on Nasdaq Helsinki.

[www.wartsila.com](http://www.wartsila.com)

**Forward Ships in brief:**

Forward Ships enables the adoption of liquefied natural gas (LNG) as the fuel of choice for ships at a global scale. Forward Ships has applied existing and tested technology to design a cargo ship that emits up to 35% less CO<sub>2</sub>, 80% less NO<sub>x</sub>, 99% less SO<sub>x</sub>, 99% less particulate matter (PM) than conventional ships. Forward Ships is the result of Project Forward, a five-year R&D effort led by Arista Shipping.

[www.forwardships.com](http://www.forwardships.com)

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