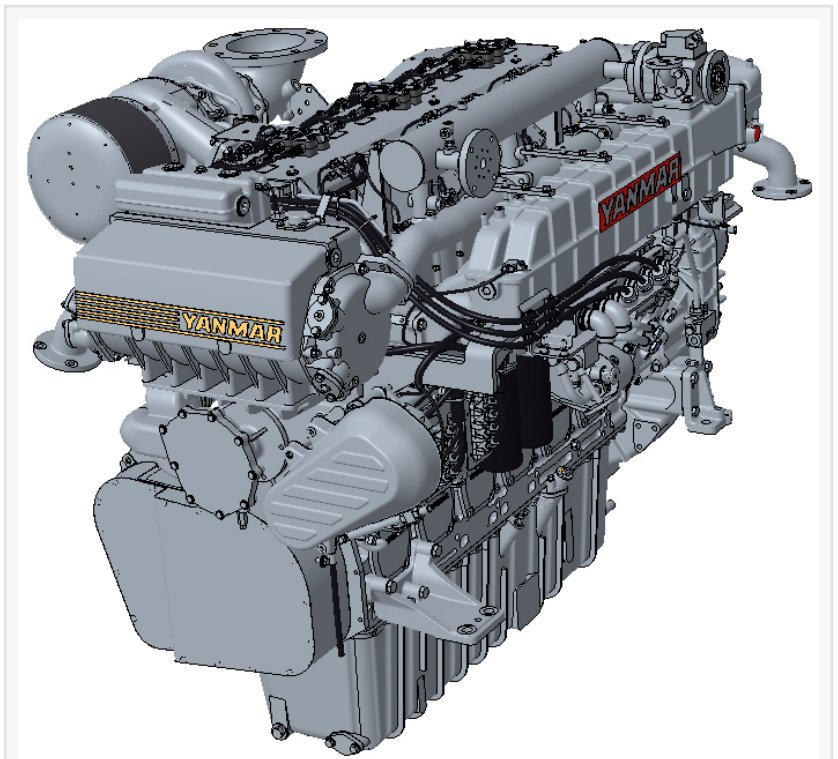


Development of Hydrogen-Fueled 4-Stroke Engine Underway for Zero Emission Vessels

OSAKA, JAPAN, January 11, 2024 /EINPresswire.com/ -- Yanmar Power Technology Co., Ltd. (YPT), a subsidiary of Yanmar Holdings Co., Ltd., has embarked on the development of a hydrogen-fueled 4-stroke high-speed engine for power generation for coastal vessels in Japan as part of the Nippon Foundation's zero emission ship demonstration experiment. The engine utilizes hydrogen as a fuel, emitting no CO2 during combustion.

In parallel with the hydrogen engine development, YPT will also work on the creation of a hydrogen engine-compatible hybrid electric propulsion vessel, combining hydrogen engine generators with batteries. This innovative vessel design incorporates a container unit-type hydrogen power generation system on its upper deck. Uyeno TransTech Co., Ltd., a shipping company in the Uyeno Group, will be responsible for the vessel's development and construction.

To support the transition towards zero emissions in maritime operations, YPT aims to develop a pilot ignition engine that utilizes a small amount of pilot biofuel and hydrogen co-combustion, as well as a spark ignition hydrogen-only engine. The company plans to commence onshore verification tests in 2024 using a 6-cylinder hydrogen engine with pilot ignition, with the goal of conducting verification operations by 2026. Concurrently, YPT will conduct onshore verification tests using



Pilot-ignition 6-cylinder hydrogen engine.



Rendering of hydrogen fuel engine electric propulsion ship. (Ship color to be decided.)

the spark ignition hydrogen-only engine. By approximately 2030, they aim to achieve zero emissions for coastal vessels by promoting the adoption of hydrogen energy-based propulsion systems.

The Zero-Emission Ship Project

The "Zero-Emission Ship Project," led by the Nippon Foundation, prioritizes the development of hydrogen-fueled ships to achieve carbon neutrality in the coastal shipping sector by 2050. Through this initiative, YPT aims to pioneer the development of hydrogen-powered vessels and conduct demonstration experiments.

Consortium members (6 as of June 2023)

As of June 2023, the consortium for this project includes:

Yanmar Power Technology Co., Ltd. (representative)

Uyeno TransTech Co., Ltd.,

Kyoto University,

Fukuoka Shipbuilding Co., Ltd.,

Mitsui E&S Shipbuilding Co., Ltd., and

Mirai Shipbuilding Co., Ltd.

Responsibilities: 4. detailed vessel design and construction, 5. basic planning, 6. design and construction of hydrogen engine container generation units.

YPT's endeavor aligns with the organization's commitment to advancing sustainable marine operations and showcases their dedication to developing cutting-edge technologies for the future of the maritime industry.

About Yanmar

With beginnings in Osaka, Japan, in 1912, Yanmar was the first ever to succeed in making a compact diesel engine of a practical size in 1933. A pioneer in diesel engine technology, Yanmar is a global innovator in a wide range of industrial equipment, from small and large engines, agricultural machinery and facilities, construction equipment, energy systems, marine, to machine tools, and components — Yanmar's global business operations span seven domains. On land, at sea, and in the city, Yanmar provides advanced solutions to the challenges customers face, towards realizing A Sustainable Future. For more details, please visit the official website of Yanmar Holdings Co., Ltd.

<https://www.yanmar.com/global/about/>

About the Uyeno Group

The Uyeno group is comprised of 35 companies engaged in the transportation, storage and sales of petroleum and chemical products essential for industrial and civic life, as well as being engaged in ventures related to solar energy and marine environments. Since our establishment in 1869, we have made vast contributions to societal development stretching over a variety of business fields and have accumulated a wealth of experience and expertise over a span of more

than 150 years.

Release from Uyeno Transtech (Japanese):

<https://www.uyeno-group.co.jp/news/index.html>

About the Nippon Foundation

Share the pain. Share the hope. Share the future.

Since its founding in 1962, The Nippon Foundation, Japan's largest philanthropic foundation, funded by the proceeds of Japanese motorboat racing, has pursued activities in a wide range of fields including support for children and persons with disabilities, disaster relief, ocean affairs, and humanitarian aid across racial and national borders.

<https://www.nippon-foundation.or.jp/>

Paul Bartels

Yanmar Holdings

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