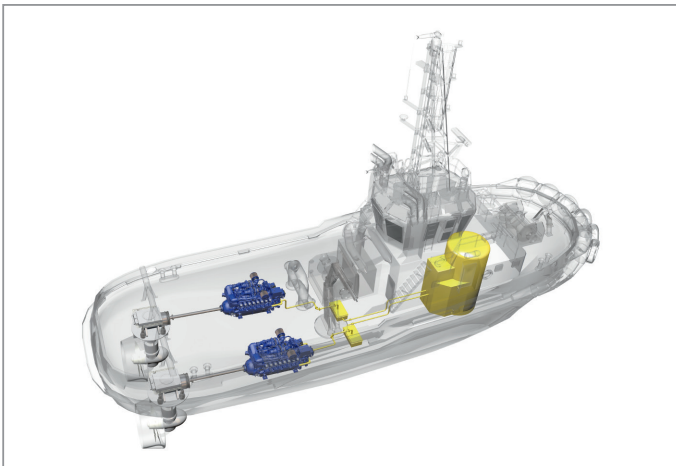




Commercial marine

World's first harbor tugboat with a high-speed gas engine Series 16V 4000 gas engine



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Three together in one boat

Damen, the Dutch shipbuilder, Rolls-Royce Power Systems and Danish shipping company SVITZER have formed a partnership to bring to market the world's first tugboat featuring high-speed natural gas engines (CNG). The new, environmentally-friendly tug is due to undergo commissioning at the end of 2017. The 16-cylinder gas engine currently being developed as a new product by MTU is based on the trusted MTU Series 16V 4000 M63 diesel engine for workboats. It is being upgraded with multipoint gas injection and a safety concept optimized for the use of CNG fuel. Its clean combustion means the engine will comply with IMO-III emission standards without the need for exhaust gas aftertreatment. Delivering 2000 kW, the MTU gas engine will be able to demonstrate high power density and low fuel consumption.

Kristian Brauner, Head of Technology at SVITZER explains why the shipping line is investing in a groundbreaking project such as this: "Fuel is a key cost factor for all shipping companies. As one of the largest harbor tug companies, the lower fuel costs of these tugs is a major reason behind our decision. At the same time, we want to stay on the ball, innovating as a means of ensuring safe, environmentally friendly operations. This investment is a logical extension of our philosophy of combining the tugboat business and environmental protection." Asked about their part in this pioneering project, Chiel de Leeuw, Sales Manager Europe at Damen, said, "Damen is proud to be

building this prototype. Its MTU Series 4000 engines give the tug very fast acceleration and outstanding maneuverability. Its very low pollutant emissions and high efficiency also help protect the environment."

Customer

Damen Shipyards

Commissioning

2017

>> The MTU brand is part of Rolls-Royce Power Systems, providing high-speed engines and propulsion systems for marine, rail, power generation, oil and gas, agriculture, mining, construction and industrial, and defense applications. The portfolio is comprised of diesel engines with up to 10,000 kilowatts and gas engines up to 2,530 kilowatts power output. MTU also offers customized electronic monitoring and control systems for its engines and propulsion systems.