
Press release

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First Marine Application for Most Powerful MAN Medium-Speed Engine

49/60 engines with proprietary SCR systems to power Dutch dredger

MAN Energy Solutions has won the contract from Royal Boskalis B.V., the Dutch dredging and marine services company, to supply 3 × MAN 49/60 engines for a 31,000 m³ Trailing Suction Hopper Dredger (TSHD).

Each engine will come accompanied by an exhaust-gas after-treatment system, namely an MAN Low-Pressure Selective Catalytic Reduction (LP-SCR) system, that ensures IMO Tier III compliance. The newbuilding will be built at Dutch shipbuilding company, Royal IHC, at its Krimpen aan den IJssel yard and is expected to enter service in mid-2026.

Lex Nijsen – Vice President Marine, MAN Energy Solutions, said: “This entire project has special requirements in all aspects – it is absolutely a customised solution and a notable feather in our cap to have been selected as propulsion-system supplier for this unique dredger.”

Marita Krems – Senior Vice President, Head of Four-Stroke Marine & License, said: “This first order by a well-established customer in a demanding application is a significant next step towards becoming a widely applied marine engine. The 49/60 will help pave the decarbonisation path towards meeting future legislation by its ability to switch to renewable fuels such as e-methanol and biofuels.”

Christian Kamm – Sales Manager Marine Europe, MAN Energy Solutions; added: “The solution we are delivering is reliable, efficient, flexible and meets the highest emission standards. It combines green shipping of the future with innovative technologies to make shipping more environmentally friendly. This vessel marks a significant step in making Boskalis’ dredging fleet more sustainable.”

The TSHD will be diesel-electric powered with two Azipods to allow vessel operation even at shallow draught. All major drives (thrusters, dredge pump, etc.) will be electrically driven and controlled by frequency converters, enabling each system to operate at optimal speed and power. The asymmetric load-sharing results in optimal load distribution over the diesel generating sets with low fuel-consumption and high maneuverability.

Full fuel-flexibility

The BV-classed main diesel engines will be capable of running on either conventional fuels – like HFO and/or MDO/MGO – or on sustainable fuels, such as biodiesel (HVO and/or FAME). Furthermore, the ‘dual-fuel’ engines will also be delivered as (green) ‘methanol-ready’. As such, the MAN 49/60 will always be capable of meeting NO_x Tier III emission limits.

MAN Energy Solutions states that the engines maintain their high efficiency at all times and that there is no fuel penalty when operating the SCR system – especially with HFO – in great part due to the lower temperatures that MAN SCR solutions operate at.

In close cooperation with Royal IHC and Boskalis, the engines have been fitted into an engine-room design similar to those used in previous Royal IHC dredger projects.

MAN 49/60

The MAN 49/60 successfully passed its type approval test in March 2023 and features a high power-per-cylinder of 1,300 kW, reducing the number of installed cylinders necessary to meet customer power demands. While in this particular project six-cylinder engines are applied, the L-type of the engine can accommodate up to 10 cylinders, which make it capable of propelling ships typically powered by V-engines. The 49/60 is also available as 12V and 14V engine variants.

A key determinant in the choosing of the 49/60 engine was its ability to fulfil the load-acceptance requirements demanded by the TSHD's diesel-electric propulsion system in diesel mode. The next-generation MAN common-rail system 2.2, in combination with the two-stage turbocharging system used by the engine, enables it to compromise between load acceptance and efficiency.

Additionally, the next-generation SaCoS 5000 engine-automation system enables the engines to fulfil cyber security requirements and offers enhanced remote-support possibilities.

MAN SCR

SCR is the most tested and approved system for achieving NO_x-reduction rates of up to 90%. The MAN LP-SCR system provides a proprietarily developed and integrated solution for MAN Energy Solutions' entire portfolio of four-stroke medium- and high-speed engines and serves as a standard solution for meeting Tier III emission limits. This SCR technology exploits synergies and competences within the entire Volkswagen Group, such as the AdBlue Technology of Volkswagen Truck & Bus division, and has proven its performance in the automotive field millions of times.

Unlike other SCR solutions, MAN SCR systems do not require a pre-silencer as they have been designed to reduce pulsation and vibration, in the process extending times-between-overhauls. MAN Energy Solutions also offers customised SCR systems on demand and, to date, has sold more than 350 of its own LP-SCR systems for marine newbuilds and more than 20 of its own LP-SCR systems for retrofit solutions.

About Boskalis

Royal Boskalis N.V. is a Dutch dredging and marine services company that provides services relating to the construction and maintenance of maritime infrastructure internationally. With core activities such as coastal defense, Boskalis is able to provide adaptive and mitigating solutions to combat the effects of climate change and the company facilitates the development of offshore energy infrastructure, including renewable wind energy. Boskalis employs around 10,000 employees and operates 600 vessels and floating equipment in over 75 countries and six continents.



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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.