Press release

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MAN Energy Solutions SE
Teglholmsgade 41,
2450 Copenhagen SV,
Denmark
www.man-es.com

Group Communications
Nils Søholt
P +45 33 85 26 69
Nils.Soeholt@man-es.com

Full-Scale Ammonia Engine Runs at 100% Load

Two-stroke ME-LGIA engine testing in Copenhagen passes further milestone on path to commercial market entry

MAN Energy Solutions has reported that its ME-LGIA (-Liquid Gas Injection Ammonia) engine, currently undergoing testing at its Research Centre Copenhagen (RCC) facility, has run at 100% engine load for the first time.

Ole Pyndt Hansen, Head of Two-Stroke Research & Development, MAN Energy Solutions, said: “We began full-scale testing in November 2024 and have since proceeded in a cautious and safety-first way. We have now operated the engine on ammonia from 25–100% load, marking yet another important step forward in the maritime energy transition. As such, we have now validated the ammonia fuel-injection system over the full load-curve with diesel-pilot amounts recorded according to our targets. Furthermore, the positive emission and performance characteristics from previous, single-cylinder tests have now also been validated in full-scale engine operation.”

MAN Energy Solutions states that its proprietary SCR (Selective Catalytic Reduction) was operational at all test loads to treat exhaust gases, and that all supply and safety systems worked as intended. It also says that the next phase of testing will focus on performance and emission optimisation, including injection and SCR systems as well as control strategies.

Christian Ludwig, Head of Global Sales & Promotion, Two-Stroke Business, MAN Energy Solutions, highlighted the ME-LGIA’s PTO (Power Take-Off) capability and said: “The ME-LGIA concept is based on the Diesel-cycle combustion principle, which makes it eminently suitable for PTO. Prior to this round of testing, we simulated PTO on the ammonia engine with very positive results and are very happy to see this replicated in real life. We intend to support PTO on the ME-LGIA to the same degree as with the other Diesel-cycle engines in our low-speed portfolio.”

The ME-LGIA test engine at Research Centre Copenhagen

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.