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MAN Energy Solutions SE
Teglhølmegade 41, 2450 Copenhagen SV,
Denmarkwww.man-es.com

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

Surge of Orders for ME-GA

New engine standard arises for LNG carriers as increased focus on methane-slip drives new orders for low-pressure, dual-fuel engine and accompanying EGR

MAN Energy Solutions has announced that its MAN B&W ME-GA engine – the latest addition to its dual-fuel portfolio – has landed 40 orders since its market unveiling in March 2021. The company attributes the order surge to the market's demand for the latest generation of Otto-cycle, two-stroke engines and the low levels of methane slip it can unlock.

Bjarne Foldager, Senior Vice President and Head of Two-Stroke Business, MAN Energy Solutions, said: "We had high expectations for the ME-GA upon its launch as we recognised a strong desire – primarily from the LNG carrier market – for an alternative to our successful ME-GI engine. Judging alone by the fact that ME-GA has won references from all three major shipyards in Korea, these expectations have been met and even exceeded."

Thomas S. Hansen, Head of Promotion and Customer Support, MAN Energy Solutions, said: "As industry leaders committed to lowering emissions, the ME-GA comes with our high-pressure EGR as standard, a technology we have refined over the past decade. The increased focus on methane-slip reduction – as well as other operational/technical benefits – has established EGR technologies as the new standard for contemporary LNG-carrier design featuring Otto-cycle engines."

As its pre-mixed combustion results in low NO_x emissions, the ME-GA engine is inherently Tier II and Tier III compliant in gas-operation mode. EGR enables the significant reduction of methane slip, while simultaneously improving fuel efficiency in both gas and fuel-oil operation. Ultimately, EGR actively reduces emissions and improves efficiency in both Tier II and Tier III.

Foldager added: "The ME-GA engine is just MAN Energy Solutions' latest initiative to decarbonise shipping and further the maritime energy transition to sustainable fuels. Our dual-fuel engines continue to act as standard bearers for environmentally-friendly, reliable propulsion-technology with their seamless switching between fuels. Ultimately, we expect the ME-GA to become standard among LNG carriers."

MAN Energy Solutions aims to start testing the first, commercial ME-GA design by the end of this year, with the first engine delivery scheduled for early 2022.

About ME-GA

The MAN B&W ME-GA engine delivers a low CAPEX solution aimed at certain vessel types and applications, such as LNG carriers, that are able to use 'boil-off' gas as a source of fuel. It could also be of appeal to smaller vessels where low capital outlay is a priority.

Based on the well-proven MAN B&W dual-fuel design with minimal installation requirements, the MAN B&W ME-GA uses an efficient ignition concept and unique gas-admission system that delivers safe and reliable operation.

The ME-GA furthermore features minimal operational costs, simple supply and purging concepts, and low maintenance costs for its fuel-gas supply system. With Tier III compliance in gas mode, the engine meets all current and upcoming NO_x emission regulations with the addition of EGR.

The ME-GA joins the well-established ME-GI Diesel-cycle engine in MAN Energy Solutions' two-stroke-engine portfolio, which now offers both low- and high-pressure, dual-fuel solutions for operation on LNG.

About EGR

In November 2020, MAN Energy Solutions announced that it would offer its proprietary EGR (Exhaust Gas Recirculation) system as an emissions solution for the ME-GA. EGR is a NO_x-emissions-reduction technique that ensures IMO Tier III-compliance in diesel mode for the ME-GA.

The company reports that EGR will enable the ME-GA to reduce specific gas consumption by ~3%, and specific fuel-oil consumption by 5%. It will also significantly reduce methane slip by 30 to 50%, and improve the stability of the Otto-cycle combustion process. EGR will enable the ME-GA to meet Tier III requirements in both fuel oil and gas modes without additional aftertreatment.

The ME-GA EGR solution is an engine-integrated design that interacts with the exhaust gas before the turbocharger, and can be integrated into existing engine-room designs since the EGR unit itself does not change the engine footprint. Its design-similarity to that of ME-C engines' EGR systems will lower its price point, since the supply chain and components are already matured.

The volume requirements of the ME-GA EGR system are also significantly lower with, for example, less pipework required than for low-pressure EGR solutions.

Due to its performance and environmental benefits, each ME-GA engine comes with EGR as standard.



Graphical rendering of an MAN B&W G70ME-GA engine

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.