

H₂-ready: MAN Gas Engines Enable Hydrogen Use in Power Plants

Press release

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MAN Energy Solutions has announced that its gas-powered, four-stroke engines are 'H₂-ready' and operable in stationary mode with a hydrogen content of up to 25% by volume in a gas-fuel mix. As such, within the power-plant segment, the company's MAN 35/44G TS, 51/60G and 51/60G TS gas engines are now designated as H₂-ready and capable of exploiting hydrogen to further reduce CO₂ emissions. This hydrogen-combusting capability enables MAN gas engines to meet Level B requirements of the European Engine Power Plants Association's (EUGINE) H₂-readiness standard. With Power-to-X fuels such as synthetic natural gas (SNG), MAN engines can already be operated in a completely climate-neutral way.

"Flexible and decentralised, gas-fired power plants will play a decisive role for a secure power-supply on the pathway towards 100% renewable energy," said Dr Gunnar Stiesch, Head of Engineering Engines at MAN Energy Solutions. "The CO₂ emissions of these power plants can be further reduced by mixing the fuel gas with hydrogen. Green hydrogen is still a scarce commodity and therefore our engines offer operators full flexibility within the scope of the admixture possible in the existing gas network. At the same time, we are working on future concepts that will enable hydrogen fuelling of up to 100% as soon as it becomes available in large quantities."

The adaptive combustion control (ACC) of the MAN engines reacts fully automatically to varying hydrogen contents in the natural gas and enables operation without loss of efficiency, even with fluctuating H₂ content. Gas engines already in operation can be retrofitted for hydrogen blend-in by upgrading the automation and adding additional ACC sensors.

"We are focusing our R&D efforts on offering our customers maximum operational flexibility and future-proofness," said Stiesch. "The development of a hydrogen economy will take several years, during which time the infrastructure will be upgraded and the production of green hydrogen ramped up. In the German natural-gas grid, for example, a maximum admixture of up to 10% is currently possible; in the future, 20% will be feasible. With our engines, power-plant operators are optimally positioned for this situation."



Gas-powered, four-stroke engines from MAN Energy Solutions are operable in stationary mode with a hydrogen content of up to 25% by volume in a gas-fuel mix.

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.