MAN builds district heating power plant for EnBW in Stuttgart
The new gas engine power plant will save up to 60,000 tonnes of CO₂ per year

MAN Diesel & Turbo has been commissioned with the planning and, upon investment approval, the construction of a 30 MW gas engine power plant by Energie Baden-Württemberg AG (EnBW). The combined heat and power plant (CHP) at the Stuttgart-Gaisburg site will be operated using three MAN type 20V35/44G gas engines and will not only supply electrical power but also an additional 30 MW of district heating. Commissioning is scheduled for 2018.

“This is our second engine CHP plant in Germany and an important milestone in further establishing the highly efficient gas engine technology”, says Wayne Jones, Member of the Executive Board for Global Sales and After Sales at MAN Diesel & Turbo. “The new plant, consisting of boilers, heat storage and gas engines, will serve to replace a mainly coal-fired thermal power plant at the same location and has a particularly high fuel utilisation rate due to its overall efficiency of more than 85% (without tolerance). Switching from coal to gas will reduce CO₂ greenhouse gas emissions by up to 60,000 tonnes per year.”

With an increasing share of renewable energies in electricity production, flexible gas engine power plants with cogeneration are the perfect solution for security of supply, efficiency and the reduction of emissions. The combination of gas engines with CHP and district heating storage makes it possible to decouple electricity and district heating supply, meaning that the operator can respond flexibly to pricing signals.

"We are investing in climate protection and security of supply," states Diana van den Bergh, Project Manager at EnBW. "The new gas engine power plant will significantly reduce site emissions and contribute to improving the air quality in Stuttgart. The site in Gaisburg has been generating heat and electricity for the Stuttgart area for over 60 years. The modernisation will ensure that the site can fulfil these tasks even more efficiently and environmentally friendly in future."

Large gas engines are particularly well-suited when it comes to the supply of district heating and they are superior to other generation technologies of this plant size. This was confirmed in a recent study by the University of Duisburg-
Essen. The 10MW 35/44G gas engine used in Gaisburg has a power to heat ratio close to one, ideal for CHP plants.”

The plant in Gaisburg is based on the recently introduced MAN Diesel & Turbo concept for gas engine power plants with cogeneration. The modular plant concept can be scaled from 7 MW up to any size. The high degree of standardisation, allows for short planning and delivery times.

The project is set to be implemented in two stages: “For the modernization of the Stuttgart-Gaisburg heating power plant, we are following a proven implementation concept. The first step is to obtain all required permits. The final decision for the realisation of the plant will only be taken once all permits have been obtained and provided that the applicable regulatory framework allows for an investment at the time,” explains van den Bergh.

About MAN Diesel & Turbo
MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world’s leading provider of large-bore diesel and gas engines and turbomachinery. The company employs around 14,500 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, India and China. The company’s product portfolio includes two-stroke and four-stroke engines for marine and stationary applications, turbochargers and propellers as well as gas and steam turbines, compressors and chemical reactors. The range of services and supplies is rounded off by complete solutions like ship propulsion systems, engine-based power plants and turbomachinery trains for the oil & gas as well as the process industries. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand.