



Production of alternative fuel – new opportunities for MAN

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The significant rise in oil prices is promoting increased use of technology for the production of alternative fuels, which have meanwhile become economically viable as a result of high energy prices. This opens up considerable growth opportunities for the MAN Group. In the wake of rising prices for crude oil, new so-called GTL and BTL production facilities are emerging worldwide for which MAN is either supplying key components or undertaking the design and planning. "Based on our innovative products, MAN is already a major player on the energy markets of the future," said Håkan Samuelsson, Executive Board Chairman of MAN AG, at today's press conference in Munich.

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Thanks to technical processes such as gas to liquid (GTL) and biomass to liquid (BTL), natural gas, but also wood and straw, can be liquefied to create synthetic fuel for conventional diesel engines. MAN supplies large-scale components, such as air-separation plants and reactors, to produce these alternative fuels, having numerous reference projects in the fields of compressor and turbine construction, as well as reactor and plant engineering. Between 60 and 70 plants for converting natural gas into high-grade synthetic fuels are currently being planned worldwide.

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In the port of Ras Laffan (Qatar), the world's largest gas-to-liquid plant to date is due to be commissioned in the course of this year – producing 34,000 barrels per day. The 3,500 tons of oxygen needed each day are to be extracted by air-separation plants built by MAN TURBO. Based on a highly-complex process and using high-tech compressors, the plants break down air into its different elements, making these available to the customer for further use. This method will also make it possible to tap, on a long-term basis, vast global reserves of natural gas that were previously considered uneconomic. Exploiting GTL can significantly defer the finiteness of this source of fossil energy.

The conversion of gas and biomass into liquid fuels also opens up additional applications for MAN DWE's fixed-bed tubular reactors. Together with the air-separation trains, these high-tech, purpose-built modules, each weighing up to 1,500 tons, form the core of every GTL plant. Several reactors are currently being constructed and installed for a GTL project due to become operational in 2009.

The key components manufactured by MAN can also be used for biomass-to-liquid projects – an application for which experts are predicting a magnificent future. Like the synfuel produced using GTL, fuels obtained from biomass, so-called sunfuels, are also free from sulphur. An additional advantage of these fuels "made by the sun" is that, being CO₂-neutral, they are clean-burning and therefore make a significant contribution to climatic protection. According to the European Union, the share of biofuel should amount to 20 percent of total fuel consumption by 2020.

MAN TURBO and MAN DWE will be working very closely together on the worldwide GTL and BTL projects due to materialise. MAN Ferrostaal will also become increasingly involved in designing and planning these plants. This MAN company has not only acquired an excellent reputation as a global industrial service provider in the methanol sector, but its additional experience in the production of biodiesel and bioalcohol also make it predestined to enter the field of building and contracting activities for GTL and BTL plants. Such plants can directly serve markets anywhere in the world with on-site facilities for extracting fuel from local, renewable resources.

The **MAN Group** is one of Europe's leading manufacturers of engineering equipment and vehicles, generating annual sales of around €15 billion. MAN supplies products, systems and services to the capital goods industry and employs approx. 58,000 people worldwide. The Business Areas operated by the MAN Group, Commercial Vehicles, Industrial Services, Printing Systems, Diesel Engines and Turbomachines, all hold leading positions in their markets. MAN AG, Munich is a member of the DAX German Share Index, which comprises Germany's top 30 public limited companies.