



## London Places Power Turbine Order

25/02/2010

Two TCS-PTG systems to boost efficiency of green power plants

**H. Cegielski – Poznan S.A. has ordered two MAN Diesel TCS-PTG18 Power Turbine systems from MAN Diesel’s Turbocharger Business Unit. The TCS-PTGs will boost the efficiency of two environmentally friendly, diesel power plants to be constructed by Land & Marine for renewable energy company Blue-NG in London.**

A H. Cegielski-built MAN B&W 7K60MC-S engine producing 13.9 MW lies at the heart of each plant. Blue-NG is committed to being best in class at building the most efficient power plants in the world, and is sparing no effort to optimally use the energy created by the two Combined Heat and intelligent Power (CHiP) sites. Accordingly, no less than 5 generators installed in 5 cycles will accumulate a total of 18.3 MW (electrical power) at each plant.

MAN Diesel’s latest, market-leading, high-efficiency TCA turbochargers make it possible to divert more exhaust gas to power turbine-based, energy-recovery systems. In such applications, the power turbine is inserted into the exhaust-gas system parallel to the turbocharger. Here, it drives an electrical generator via a reduction gearbox and receives up to 13% of the exhaust-gas flow, diverted from the main-engine power.

A TCS-PTG18 will be employed at each of the coming plants, based on the newly developed, high-efficiency turbine of a TCR18 turbocharger. A high-efficiency, high-speed gearbox will reduce turbine speed to generator speed, with the generator and gearbox connected to each other by a highly flexible coupling. The TCS-PTG will supply up to 570 kW to the grid and increase the power plant’s overall efficiency by some 3%. At lower engine loads, the TCS-PTG will be shut down. Control valves and fast-acting emergency valves for emergency shutdown are installed in the exhaust system to ensure reliable, safe operation.

MAN Diesel holds more than 30 years’ expertise in the development, production and servicing of power-turbine applications, and can boast of some 50 reference plants, mostly installed aboard ships. The London order sets another milestone as it is the

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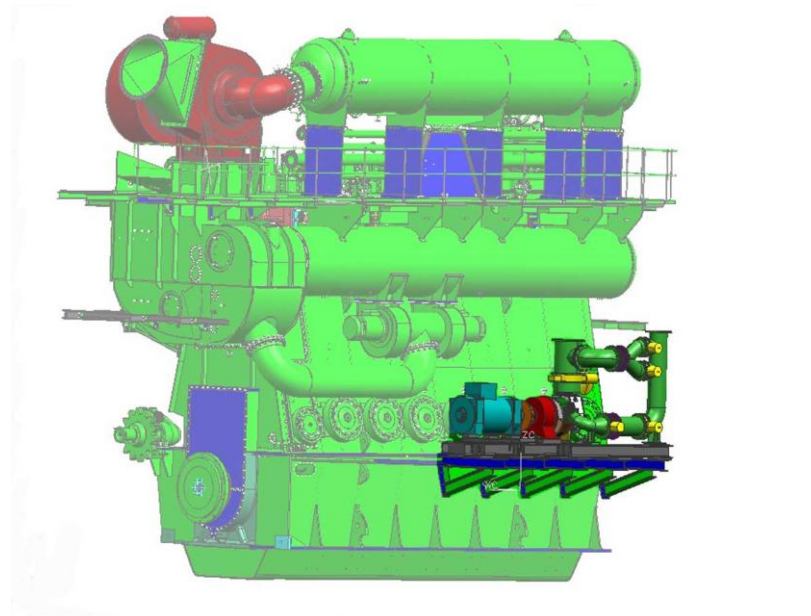
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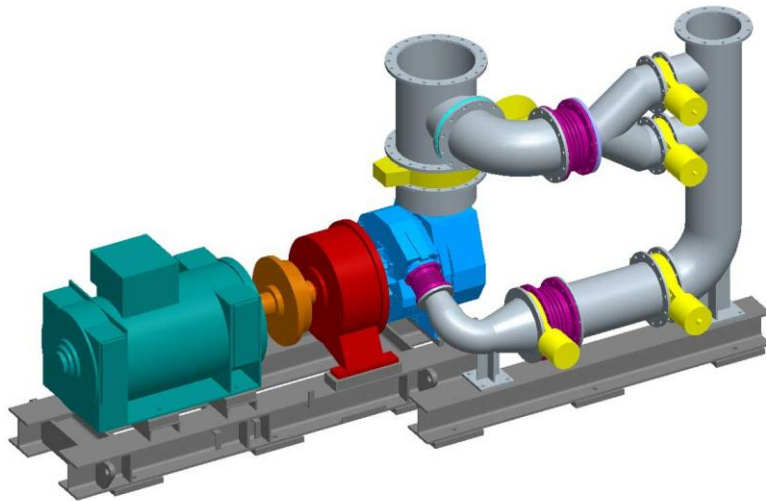
first order for the newly developed generation of power turbines based on the new TCR turbocharger series.

MAN Diesel sees good potential for further applications of TCS-PTG waste-heat recovery systems in diesel power plants and marine applications. “The dramatic increase in fuel prices in 2008 has revived interests in systems that maximise overall system efficiency,” says Dr. Antonio Fernandez, Vice President Sales and Promotion at MAN Diesel Turbocharger. “The ongoing CO<sub>2</sub>-debate, and the fact that more and more companies are considering environmental issues in their newbuilding projects, will make the waste-heat recovery system an interesting option.”

Fernandez concludes: “Besides the present TCS-PTG system, MAN Diesel, along with its present sister company and coming merger-partner, MAN Turbo, will offer thermo-efficiency systems including steam turbines, power turbines and generators from one source. These systems will be able to add more than 10% extra power relative to main-engine power.”



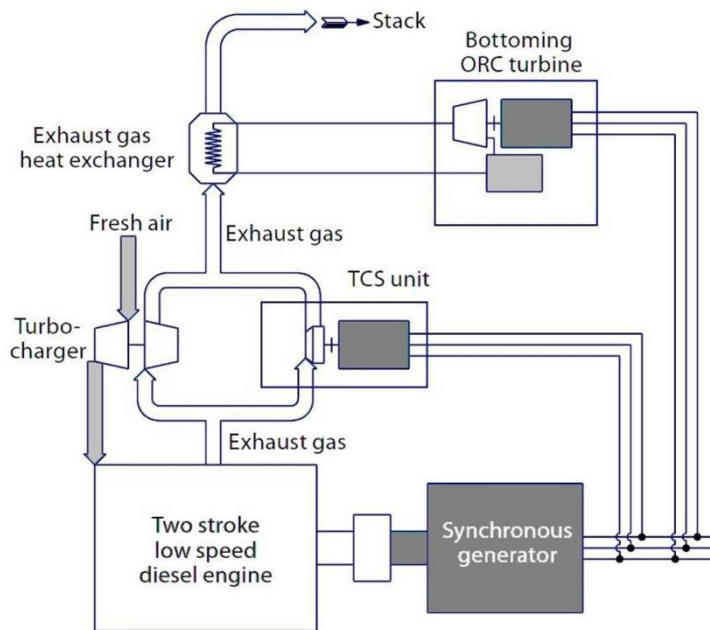
*Illustration of a MAN B&W 7K60MC-S engine with TCA77 turbocharger with a MAN Diesel TCS-PTG18 waste-heat recovery system highlighted*



*MAN Diesel TCS-PTG18 waste heat recovery system with power turbine, gear coupling and asynchronous generator mounted on base frame*



*H. Cegielski Poznan and MAN Diesel representatives pictured after signing the order for the two TCS-PTG Power Turbine Systems. From left to right: Maciej Sumelka (HCP), Oswald Löwlein (MAN Diesel), Zbigniew Wojtyto (HCP), Dirk Balthasar (MAN Diesel), Jolanta Radziej (HCP), Janusz Kwiatkowski (Consultant) and Jacek Manczak (HCP)*



*System diagram of the set-up for the London power plants*

**About MAN Diesel**

MAN Diesel is the world's leading provider of large-bore diesel engines for marine and power plant applications. The company designs two-stroke and four-stroke engines, generating sets, turbochargers, CP propellers and complete propulsion packages that are manufactured both by MAN Diesel and its licensees. The engines have power outputs ranging from 47 to 97,300 kW. MAN Diesel employs over 7,700 staff, primarily in Germany, Denmark, France, the Czech Republic, India and China. The global after-sales organisation, MAN Diesel PrimeServ, comprises a network of the company's own service centres, supported by authorised partners. MAN Diesel is a company of MAN SE, which is listed on the DAX share index of the 30 leading companies in Germany.

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