Wärtsilä and MAN Diesel & Turbo initiate **HERCULES-2** research project aimed at minimizing emissions

Wärtsilä Corporation, Press release, 22 September 2014 at 1:00 PM E. Europe Standard Time

The HERCULES R&D programme to develop large engine technologies, which was initiated in 2004 as a joint vision by the two major European engine manufacturing groups, Wärtsilä and MAN Diesel & Turbo, is to continue with a new HERCULES-2 project, pending approval under the Horizon 2020 EU Framework Programme for Research and Innovation.

The HERCULES-2 project is aimed at developing a fuel-flexible marine engine that is optimally adaptive to its operating environment. The work will focus on four areas of integrated R&D divided into Work Package Groups (WPG), as follows: WPG 1 - a fuel flexible engine; WPG II - new materials (for engine applications); WPG III - an adaptive powerplant for lifetime performance; and WPG IV – a near zero emissions engine.

This work will build upon and surpass the targets of the previous HERCULES projects by going beyond the limits set by the regulatory authorities. By combining the very latest technologies, and through the use of integrated solutions, the new project aims to achieve significant reductions in fuel consumption and exhaust emissions. The project includes several full-scale prototypes and shipboard demonstrators that will speed the development of commercially available products. This co-operation between Wärtsilä and MAN Diesel & Turbo will also involve a number of other European companies, as well as universities and research institutions. The project will further accelerate the shipping industry's transition to better fuel efficiency and a significantly reduced environmental footprint, while strengthening the position of the participating partners in the market place.

The consortium is made up of 32 partners, of which 30% are industrial and 70% are universities and research institutes. The budget is divided between industry and the universities on a 63% -37% basis respectively.

The original HERCULES programme was conceived in 2002 to develop new technologies to increase marine engine efficiency. The three previous projects within this programme ran from 2004 until 2014.

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About Wärtsilä:

Wärtsilä is a global leader in complete lifecycle power solutions for the marine and energy markets. By emphasising technological innovation and total efficiency, Wärtsilä maximizes the environmental and economic performance of the vessels and power plants of its customers. In 2013, Wärtsilä's net sales totalled EUR 4.7 billion with approximately 18,700 employees. The company has operations in more than 200 locations in nearly 70 countries around the world. Wärtsilä is listed on the NASDAQ OMX Helsinki, Finland.

www.wartsila.com

About MAN Diesel & Turbo:

MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world's leading provider of largebore diesel engines and turbomachinery for marine and stationary applications. It designs twostroke and four-stroke engines that are manufactured both by the company and by its licensees. The engines have power outputs ranging from 450 kW to 87 MW. MAN Diesel & Turbo also designs and manufactures gas turbines of up to 50 MW, steam turbines of up to 150 MW and compressors with volume flows of up to 1.5 million m³/h and pressures of up to 1,000 bar. The product range is rounded off by turbochargers, propellers, gas engines and chemical reactors. MAN Diesel & Turbo's range of goods includes complete marine propulsion systems, turbomachinery units for the oil & gas as well as the process industries and complete power plant solutions. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand. 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. MAN Diesel & Turbo is a company in the Power Engineering business area of MAN SE.

http://www.mandieselturbo.com

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