



## Wärtsilä and MAN Diesel gain EU approval for HERCULES-Beta Project

**1 April 2009.** The HERCULES-Beta research project proposal was recently approved by the European Commission. HERCULES-Beta represents a major international cooperative effort to maximise fuel efficiency combined with ultra-low emissions and to develop future generations of optimally efficient and clean marine diesel engines. As such, HERCULES-Beta aims to surpass the current limits set by the International Maritime Organisation (IMO) to radically improve the environmental performance of waterborne transport.

### **The HERCULES-Beta project**

HERCULES-Beta began on 1 September 2008 with a budget of EUR 25 million and it is planned to run for 36 months. The project consortium has 32 participants, including engine-component suppliers, equipment manufacturers, universities, research institutions and shipping companies from 10 European countries.

HERCULES-Beta is the second phase of the HERCULES programme, which was conceived in 2002 as a long-term strategic R&D plan. The project was initiated by Europe's two major engine manufacturers, Wärtsilä Corporation and MAN Diesel. Diesel propulsion systems currently power 99% of the world fleet.

The project's principal aim is to reduce marine diesel engine fuel consumption by 10% and to improve the efficiency of marine diesel-propulsion systems to more than 60%, significantly reducing CO<sub>2</sub> emissions as a result.

MAN Diesel Group

Teglholmegade 41

2450 Copenhagen SV

Denmark

Tel.: +45 33 85 11 00

Fax.: +45 33 85 10 30

[www.mandiesel.com](http://www.mandiesel.com)

For further information,  
please contact:

Peter Dan Petersen

Senior Manager, GMD/GMC

Tel.: +45 33 85 14 70

[peterd.petersen@man.eu](mailto:peterd.petersen@man.eu)

For graphics and images,  
please contact:

Mia Glarborg

Tel.: +45 33 85 15 90

[mia.glarborg@man.eu](mailto:mia.glarborg@man.eu)



A further aim of the project is to target ultra-low exhaust emissions by eliminating 70% of NO<sub>x</sub> and 50% of particulates from marine engines by 2020.

HERCULES-Beta comprises 54 subprojects and is funded by the European Commission's Framework Program 7 (FP7, Theme Transport).

### **The original HERCULES project**

In 2007, a group of more than 40 European companies, universities and research institutions, led by MAN Diesel and Wärtsilä Corporation, successfully completed a major, 43-month, cooperative research project under the name HERCULES (High Efficiency R&D on Combustion with Ultra-Low Emissions for Ships) with a budget of EUR 33 million, partly funded by the European Union (EUR 15 million) and the Swiss Federal Government (EUR 2.5 million).

The first phase of the HERCULES project concentrated on the development of tools (e.g., simulation software, measurement techniques, etc.) and the general investigation of potential avenues for reducing emissions and fuel consumption. Initially, the project established and operated prototypes. The results stemming from this indicate a great potential for significantly reducing fuel consumption and emissions and reaching the project's ambitious targets.

HERCULES-Beta will directly build on the findings of the first phase of the HERCULES project. The tools previously established will be employed to more closely investigate, understand and ultimately optimise the engines. Both analytical investigations as well as prototypes will be

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refined, based on first-phase results, with the intention of achieving the ultra-low emission and fuel-consumption targets. Finally, by carrying out field-tests on the prototypes developed in the first phase, information on the important effect of real-life boundary conditions will be gathered and analysed.

Please visit the (soon-to-be-functional) HERCULES website at [www.hercules-b.com](http://www.hercules-b.com) or the original Hercules website at: [www.ip-hercules.com](http://www.ip-hercules.com)

For more information, please contact:

Prof. Nikolaos P. Kyrtatos  
HERCULES Project Coordinator  
Tel: +30 210 772 1119  
[npk@uleme.com](mailto:npk@uleme.com)

Mr Niels Kjemtrup  
Senior Manager  
Process Development  
MAN Diesel  
Tel: +45 3385 1280

Mr Klaus Heim  
Vice President  
Global R&D  
Wärtsilä Corporation  
Tel: +41 5226 24462

## 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 450 to 97,300 kW. MAN Diesel employs approx. 8,000 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 AG, which is listed on the DAX share index of the 30 leading companies in Germany.

Ref no 6510-0122

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