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11 April 2016

BAUMA 2016: ROLLS-ROYCE TO SHOWCASE MTU EU STAGE V ENGINES

- MTU EU Stage V engines on display at Bauma for first time
- Emission Flex Package enables diesel engines to be used in countries with widely differing emission requirements

FRIEDRICHSHAFEN/MUNICH – Rolls-Royce will be presenting its MTU engines for construction site vehicles, industrial and mining applications at BAUMA, the world's leading trade fair for construction machinery, from 11 to 17 April 2016 on stand 314 in Hall A4. MTU engines for the EU Stage V off-highway emission regulations will be presented to the construction industry for the first time. MTU's Emission Flex Package, which is designed to enable engines operating in the countries with widely differing emission requirements and fuel with a high sulphur content will also be debuted. MTU Onsite Energy will be showing its mobile and stationary diesel gensets for the generation of electric power on construction sites. The MTU and MTU Onsite Energy brands are part of Rolls-Royce Power Systems.

EU Stage V engines from MTU – even more environmentally friendly, more economical and more powerful

MTU's Series 1000 to 1500 engines (100 – 480 kW) are currently being further developed jointly by MTU and Daimler based on Daimler commercial vehicle engines to meet EU Stage V regulations. They are expected to be available in good time for the planned introduction of the new emission standards in 2019. The MTU engines meet the new emission limits using advanced internal engine technology, an SCR system and an additional diesel particulate filter. Bernd Krüper, Head of Construction & Agriculture Business at MTU, said: "Construction companies will benefit immediately from the advanced technological developments for EU Stage V. What we expect to see from the development work are higher torque at low rpm, a further reduction in fuel consumption and an extended power range compared with predecessor engines."

Emission Flex Package from MTU provides vehicle operation worldwide

MTU will be debuting its Emission Flex Package, which enables customers to operate engines in countries where widely differing emission requirements apply and fuels have a higher sulphur content. Engine systems that to date have been developed solely for markets with stringent emission regulations with exhaust gas aftertreatment, can now be operated outside these highly regulated markets by

using engine management software designed specifically for the purpose, thus eliminating the need for complex exhaust gas after treatment systems, with the result that no hardware changes are required. This means that new vehicle designs will not have to take alternative engine compartment sizes into account.

The Emission Flex Package will be offered as a retrofit solution for Series 900, 460 and 500 engines (75 – 480 kW) based on Mercedes-Benz classic engine series designed to meet EU Stage IIIB and Tier 4 interim. These engines can be modified to operate in non-emission regulated countries. With the Emission Flex Package, new Series 1000 to 1500 engines (EU Stage IV and EPA Tier 4) can be modified to meet EU Stage IIIA.

Engines for the power range above 500 kW

MTU will have a 10-cylinder Series 1600 engine (567 to 736 kW) on display for the power range beyond 500 kW. In addition to complying with the US EPA Tier 4 emission regulations, this engine is also designed to meet the future EU Stage V regulations using internal engine technology. No exhaust gas aftertreatment is required. A 12-cylinder Series 2000 engine (560 to 1,000 kW) that is available for EPA Tier 4 emission regulations will also be on display. This engine also meets the regulations using internal engine technology. In addition, MTU offers 8, 12, 16 and 20-cylinder Series 4000 versions with power outputs extending to 3,000 kW. They meet the US EPA Tier 4 emission regulations without the need for exhaust gas aftertreatment.

Press photos are available for download from www.mtu-online.com/press

About Rolls-Royce Holdings plc

1. Rolls-Royce's vision is to be the market-leader in high performance power systems where our engineering expertise, global reach and deep industry knowledge deliver outstanding customer relationships and solutions. We operate across five businesses: Civil Aerospace, Defence Aerospace, Marine, Nuclear and Power Systems.
2. Rolls-Royce Power Systems is headquartered in Friedrichshafen in southern Germany and employs around 10,000 people. The product portfolio includes MTU-brand high-speed engines and propulsion systems for ships, power generation, heavy land, rail and defence vehicles and for the oil and gas industry. Under the MTU Onsite Energy brand, the company markets diesel gensets for emergency, base load and peak load applications as well as cogeneration plants using gas engines for the combined generation of heat and power. Bergen medium-speed engines power ships and power generation applications. L'Orange completes the portfolio with fuel injection systems for large engines.
3. Rolls-Royce has customers in more than 120 countries, comprising more than 400 airlines and leasing customers, 160 armed forces, 4,000 marine customers including 70 navies, and more than 5,000 power and nuclear customers.
4. We have three common themes across all our businesses:
 - Investing in and developing engineering excellence.
 - Driving a manufacturing and supply chain transformation which will embed operational excellence in lean, lower-cost facilities and processes.

- Leveraging our installed base, product knowledge and engineering capabilities to provide customers with outstanding service through which we can capture aftermarket value long into the future.
5. Annual underlying revenue was £13.4 billion in 2015, around half of which came from the provision of aftermarket services. The firm and announced order book stood at £76.4 billion at the end of 2015.
 6. In 2015, Rolls-Royce invested £1.2 billion on research and development. We also support a global network of 31 University Technology Centres, which position Rolls-Royce engineers at the forefront of scientific research.
 7. Rolls-Royce employs over 50,000 people in more than 46 countries. Nearly 15,700 of these are engineers.
 8. The Group has a strong commitment to apprentice and graduate recruitment and to further developing employee skills. In 2015 we employed 228 graduates and 277 apprentices through our worldwide training programmes.

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