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Cummins Announces Integrated Technology Path to Meet Tier 4

Cummins Particulate Filter And Cooled EGR For 2011 Interim Solution

COLUMBUS, Ind.--(BUSINESS WIRE)--

Cummins Inc. (NYSE:CMI) announced today its technology path to meet stringent U.S. EPA Tier 4 Interim and European Stage IIIB mobile off-highway emissions standards across the 174-hp to 751-hp (130-560 kW) powerband, which takes effect in 2011.

Core technology will be Cummins Particulate Filter and cooled Exhaust Gas Recirculation (EGR) as part of an integrated technology solution extending from air intake to exhaust aftertreatment. Engine enhancements will also include the use of Cummins Variable Geometry Turbochargers (VG Turbo), advanced electronic controls and High Pressure Common Rail fuel systems.

Common Tier 4 subsystem architecture will extend from the MidRange QSB to the Heavy-Duty QSX engines. The Cummins Tier 4 product range will maintain or increase power outputs compared to Tier 3. Fuel efficiency will be improved by up to 5 percent, dependent on rating and duty cycle.

"Our Tier 4 solution is driven by the need to deliver the lowest cost of ownership and most productive power solutions for operators," said Ric Kleine, Vice President of Cummins Off-Highway Business.

"Cummins' long-term investment in the design and manufacturing of key component technology provides a significant advantage for our Tier 4 solution. We were able to take the proven durability of our Tier 3 base engines and combine this with successful technologies, such as cooled EGR, we have leveraged from Cummins' broad experience. Our customers can be confident that Cummins will continue to deliver the most dependable power solutions.

"While exhaust aftertreatment may be new technology for the off-highway industry, it is not new to Cummins. Our Cummins Emission Solutions business is one of the world's leading manufacturers of this key component technology. For Tier 4 applications of the Cummins Particulate Filter, we are factoring in off-highway requirements such as high-shock loads, angularity, space restrictions and working environment conditions," added Kleine.

Cummins achieved Tier 4 Interim emissions levels by developing the engine combustion recipe to work with the aftertreatment filter in reducing particulate matter (PM) emissions levels by 90 percent. The use of cooled EGR enables the required 45 percent reduction in oxides of nitrogen (NOx) to be achieved. Cummins cooled EGR is an engine-integrated subsystem which has proven to be highly effective working in tandem with Cummins VG Turbo. This provides superior engine response with optimized boost at given exhaust gas recirculation rates and engine speeds. Clean engine credentials will be further enhanced with a Cummins-designed crankcase filter which eliminates escaping blowby gases, oil mist and droplets.

Across its entire lineup of off-highway engines, Cummins is able to meet increasingly stringent emissions regulations with speed and efficiency, due primarily to two competitive advantages.

First, Cummins benefits from an integrated business structure that enables it to tap the core competencies of Cummins Emission Solutions, Cummins Turbo Technologies, Cummins Fuel Systems and Cummins Filtration. These businesses work together to bring to market technologically superior, fully integrated systems. Second, Cummins benefits from its worldwide experience and leadership with a wide range of proven technologies. Cummins continues to execute its carefully planned product strategy, anticipating changes and investing in the research and development necessary to meet customer needs and environmental goals.

Air Intake To Exhaust Aftertreatment Integration

Equipment manufacturers will be able to take advantage of specifying a single-source Tier 4 power system from Cummins, extending from the air intake filter system to exhaust aftertreatment. This ability to design, manufacture and integrate all the key subsystems enables significant benefits to be realized with better integrated and more compact installations. Seamless electronic control of both engine and aftertreatment will be driven from an upgraded engine electronic control module.

"Minimizing installation complexity is a key focus of Cummins' Tier 4 development program. This is made possible by being able to design and pre-engineer all the key subsystems in-house," said Susan Harrison, Executive Director, Cummins Industrial Engineering.

"Cummins application engineering expertise offers a major advantage for equipment manufacturers looking to upgrade their engine installations for Tier 4. We will offer standardized engine, aftertreatment and air intake packages to speed up installation work and realize space-saving advantages for our customers.

"Utilizing the Cummins Particulate Filter and cooled EGR to meet 2011 emissions is the right approach when we look ahead to installation requirements for Tier 4 Final in 2014. With just a three-year interval between Interim and Final, we are preparing for equipment manufacturers to make installation space claims for both Interim and Final technology as they plan for 2011. We are evaluating various NOx-reduction technologies to meet Tier 4 Final when NOx will need to reduce to near-zero levels. We will utilize an incremental technology approach with the least possible installation impact," added Harrison.

About Cummins

Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana (USA), Cummins serves customers in more than 160 countries through its network of 550 company-owned and independent distributor facilities and more than 5,000 dealer locations. Cummins reported net income of $715 million on sales of $11.4 billion in 2006. Press releases can be found on the Web at cummins.com or everytime.cummins.com

Source: Cummins Inc.