

# Green Car Congress

Energy, Technologies, Issues and Policies for Sustainable Mobility

## Cummins Unveils Products for EPA 2010 Regulations

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Cummins Inc. [unveiled](#) its on-highway engine lineup ready to meet the new Environmental Protection Agency (EPA) regulations for the North American market. Cummins' 2010 products are on display at the Mid-America Trucking Show in Louisville, Kentucky, from 19-21 March.



*The Cummins Aftertreatment System used to meet 2010 regulations. [Click to enlarge.](#)*

The new EPA regulations, which take effect on 1 January 2010, are the most stringent in the world, with near-zero NO<sub>x</sub> and PM emission levels of 0.2 grams and 0.01 grams per brake-horsepower-hour, respectively. The Cummins solution for 2010 consists of a highly capable base engine with cooled-EGR, along with the Cummins Aftertreatment System, which reduces oxides of nitrogen (NO<sub>x</sub>) and Particulate Matter (PM) to achieve the standards.

Additionally, the 2010 regulations require On-Board Diagnostics (OBD) for the first time on heavy-duty diesel engines for on-highway vehicles over 14,000 pounds.

Cummins unveiled the ISX15 which will provide better fuel economy, better performance and better reliability compared to today's industry-leading ISX engine. The ISX15 features the Cummins XPI fuel system, an enhanced cooled-EGR system, a single VGT Turbocharger and the new Cummins Aftertreatment System that incorporates Selective Catalytic Reduction (SCR) catalyst technology together with the Cummins Particulate Filter that was introduced in 2007.

The ISX15 features the XPI fuel system and a single overhead camshaft for an industry-leading power-to-weight ratio among big-bore engines. Fuel economy gains of up to 5% will be realized as compared to Cummins 2007 engines, and gains of up to 9% as compared to competitive 2010 in-cylinder solutions are anticipated. Ratings will be maintained from 400-600 horsepower (298-447 kW), with torque outputs from 1450-2050 lb-ft (1966-2779 N•m).

Cummins also introduced the ISX11.9 engine was also unveiled. The ISX11.9 provides a compact and lightweight medium-bore engine targeted for vocational trucks, day cabs, emergency vehicles and motorcoach applications. Sharing common cooled EGR, VGT Turbocharger, XPI fuel system, electronic controls and aftertreatment system with the ISX15, the ISX11.9 will be offered with ratings from 310-425 horsepower (231-317 kW) and torque from 1150-1650 lb-ft (1559 – 2237 N•m).

The ISX15 will continue to feature the Intebrake, an integrated engine brake; and the ISX11.9 will be offered with an optional engine compression brake.

*Our Heavy-Duty engines for 2010 have a large 'sweet spot' due to the low-temperature NO<sub>x</sub> conversion capability of the copper-zeolite catalyst, which means that these engines are extraordinarily driver-friendly. Fuel economy gains can be realized with even the most inexperienced driver.*

—Steve Charlton, Vice President, Heavy-Duty Engineering

Cummins debuted its MidRange engines for 2010, which appear nearly identical to their 2007 counterparts with the addition of an SCR catalyst in the Cummins Aftertreatment System. Cummins MidRange engines deliver best-in-class fuel economy and reliability with best-in-class power-to-weight ratios and have made significant market share gains in medium-duty truck and bus applications.

The ISB6.7, ISC8.3 and ISL9 engines continue to feature a single Cummins VGT Turbocharger; the ISC8.3 and ISL9 engines also feature the XPI fuel system, as they have since 2007. The most predominant change for 2010 is that the MidRange engines will share a common Electronic Control Module (ECM) with Cummins Heavy-Duty engines, with increased input/output and processing capability for full integration of the Cummins engine and aftertreatment system.

Engine braking capability on Cummins MidRange engines is provided by the VGT Turbocharger, and an optional compression brake is available for the ISC8.3 and ISL9.

Cummins ISB6.7 will be offered in truck ratings of 200-325 horsepower (150-242 kW), with peak torque of 520-750 lb-ft (705-1017 N•m). Cummins ISC8.3 will be offered in truck ratings of 260-350 hp (194-260 kW), with peak torque of 660-1000 lb-ft (895-1,356 N•m). The ISL9 will be offered in truck ratings of 345-380 hp (257-283 kW) and peak torque of 1150-1300 lb-ft (1560-1763 N•m). Engine models and electronic calibrations for the bus, recreational vehicle and emergency vehicle markets will be available in 2010, as well as the ISB6.7 hybrid model.

*The use of cooled EGR and Selective Catalytic Reduction offer a substantial fuel economy improvement—up to nine percent over an in-cylinder solution. With the use of SCR, we're able to tune the combustion recipe in the engine to dramatically reduce diesel particulate filter regeneration.*

—Jim Cramer, 2010 ISB Technical Program Leader

All of Cummins 2010 on-highway MidRange and Heavy-Duty engines are compatible with long-life coolants and biodiesel blends up to B20.

**Cummins Aftertreatment System.** The new system builds on the Cummins Particulate Filter, introduced in 2007 in North America, with a Selective Catalytic Reduction system. The SCR system adds a DEF (Diesel Emission Fluid—i.e., urea)-dosing valve, decomposition reactor for the hydrolysis of DEF and a catalyst with copper zeolite coating. Truck OEM-supplied components include the DEF tank and associated plumbing and heating. DEF, a new fluid which will be required for the operation of most 2010 diesel-powered vehicles, is an American Petroleum Institute (API) certified product which will be readily available at Cummins distributors, dealers and major truckstops.