



The new Volvo Drive-E powertrain family ? world-leading engine output versus CO2 emissions

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Volvo Car Groups new two-litre, four-cylinder Drive-E powertrain family can truly be considered as offering customers a world-class blend of drivability and low CO2 emissions. The Volvo S60 T6 with 306 horsepower and the new 8-speed automatic is the first car in this segment that delivers over two horsepower per gram CO2 from a combustion engine only - and the D4 with 181 horsepower and manual gearbox is the first diesel car on this power level in the premium D-segment with CO2 emissions under 100 g/km.

"During the development phase of our Drive-E powertrains, we promised to bring efficient driving pleasure into a new dimension. The official European NEDC certification now confirms that we outperform competitors when it comes to power versus CO2 emissions, says Derek Crabb, Vice President Powertrain Engineering at Volvo Car Group.

With 306 hp and CO2 emissions at 149 g/km (6.4 l/100 km) the Volvo S60 T6 becomes the first car in the segment that offers the driver over two horsepower per gram CO2. The car accelerates from 0-100 km/h in 5.9 seconds.

Petrol engine with compressor and turbo

The new two-litre, four-cylinder T6 engine features both a supercharger and a turbo charger. Using the supercharger to fill in the bottom end torque gives the petrol engine a big, naturally aspirated feel. The mechanically linked compressor starts to function immediately at low revs, while the turbocharger kicks in when the airflow builds up.

"We have created a range of smaller, more intelligent engines with power curves that give exciting driveability compared with engines with more cylinders. At the same time we continue to reduce fuel consumption and CO2 emissions, says Derek Crabb.

The Volvo S60 T5 with 245 hp and the new 8-speed automatic is also exceptionally competitive. CO2 emissions are down at 137 g/km, which translates into fuel consumption of 5.9 l/100 km.

Class-leading diesel at 99 g/km

The Volvo S60 D4 with 181 horsepower and manual gearbox has class-leading CO2 emissions at 99 g/km, which translates into fuel consumption of 3.8 l/100 km. A Volvo V60 D4 with up to 17-inch tyres also breaks the 100-gram barrier according to the NEDC certification with CO2 emissions at 99 g/km.

The Drive-E diesels feature world-first i-ART technology with pressure feedback from each fuel injector instead of using a traditional single pressure sensor in the common rail.

Each injector has an intelligent chip on top of it that monitors injection pressure. Using this information, the self-adapting i-ART system makes sure that the ideal amount of fuel is injected during each combustion cycle.

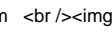
"The combination of injection pressure at 2,500 bar and i-ART technology gives the customer an engine with high performance, improved fuel economy and considerably lower emissions. It is a breakthrough comparable to our invention of the lambda sensor for the catalytic converter in 1976, says Derek Crabb.

Prepared for electrification

The Drive-E engines are prepared for future electrification from the start. The compact size of the four-cylinder engines means that the electric motor can be fitted in the front or rear of the vehicle. The battery pack will be located in the centre of the car.

"The success of our V60 Plug-in Hybrid has also proved there is no contradiction between driving pleasure and low emissions. And we have already confirmed that the all-new XC90 will be introduced in 2014 with a petrol plug-in hybrid at the top of the range, says Derek Crabb. He concludes: "The first Volvo car back in 1927 featured a two-litre, four-cylinder engine. So you can safely say that the new Drive-E powertrain family remains true to our heritage.

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