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Euro VI will require SCR with EGR

Volvo happy with Euro 6 plans

New Euro 6 emission standards for newly-manufactured trucks, come into force on 31st December 2013, which will see particle emissions halved and oxides of nitrogen emission reduced by 77 per cent.

Mats Franzén, Manager of Engine Strategy and Planning at Volvo Trucks, is satisfied with the way Volvo's engine designers are tackling adaptation to the new standards' tough limit values.

“We take a positive view of the tough requirements. They pose a challenge for us, like for everyone else. They offer our engine designers a chance to show their mettle, which gives us a clear competitive edge. We will meet the standards long before the new legislation takes effect,” he comments.

So how can the engines be improved to meet the new limit values ? For commercial reasons, Franzén does not want to specify exactly which technical improvements will be made, but there is plenty to play around with: improved software, improved friction conditions, more efficient selective catalytic reduction and adaptation of operating temperatures. It is very probable that achieving Euro 6 will require a combination of SCR, EGR and a particulate filter.

Independent researchers have raised criticisms, arguing that the Euro 6 standards will mean increased fuel consumption, given today's engine technology.

“Clearly, the challenge of Euro 6 will lie in further reducing oxides of nitrogen emissions without increasing fuel consumption and thereby increasing CO₂ emissions. Our engine designers have made enormous progress in recent decades, and we'll continue developing our engines for optimised fuel consumption regardless of changes in regulations and standards,” says Franzén.

Fuel consumption has dropped dramatically in recent decades. For example, Volvo's popular FH truck has cut its diesel consumption by almost 40 per cent in the last 30 years. With the D13 engine, launched in 2005, Volvo took the definitive step to the forefront of the industry in terms of fuel economy.

“Yes, we’re certainly leaders in fuel economy. And we’ll continue to reduce fuel consumption by about 1 percent a year. That means big savings, both in economic and environmental terms,” comments Franzén.

But the biggest improvement of all is in air emission levels. A truck thirty years ago produced the same level of particulate emissions as fifty trucks today and when Euro 6 is introduced, the level of particulate emissions will be reduced by a further 50 per cent !

“Besides becoming cleaner and more efficient, our trucks are now also stronger. 20 years ago in 1990, our most powerful engine had 470 horsepower, but today we can offer our customers the Volvo FH16, the world’s strongest truck with a 700 horsepower engine,” says Franzén.

So engine designers can meet the emission targets. However, the improvements come at a price and today’s engines are roughly twice as expensive to manufacture as in the early 1990s.