

DIESEL: FUEL OF THE FUTURE



While Renault Trucks now offers gas and electric power for urban vehicles, it predicts that diesel will still dominate long haul, finds Richard Simpson

Speaking at an Alternative Fuels Day at its Lyon headquarters in October, Renault Trucks' alternative energies development director François Savoye launched a robust defence of diesel, saying that its worst problem was its image, and that since the introduction of Euro VI, particulate emissions from a truck's brakes and tyres exceeded that from the engine output.

Renault's determination to wring more out of long-haul diesel was embodied in the reveal of its Optifuel Lab 3 artic (pictured), which promises a 13% fuel saving over existing designs, thanks to a broad range of technical improvements which cover everything from exhaust to tyres.

It is part of the Falcon (Flexible and Aerodynamic truck for Low CONsumption) project, a French government-funded initiative that brings together established players with various academic institutions, innovators and start-up companies.

The main changes to the Renault Range T tractor and Fruehauf curtainsider are a new sloping front for the tractor, which takes advantage of the extra length that the EU will allow for aerodynamics from 2020, and the trailer's adjustable roofline. If a maximum

cube load is carried, then the height of the rear of the trailer is increased until the standard 4.2m-high rectangle shape is achieved. For denser, lower loads where the full height is not required throughout the trailer length, then the rear of the roof is lowered automatically to create a more aerodynamic shape.

The rear of the cab is blended into the trailer nose by fairings, and additional fairings cover the trailer wheels. At the front end, the cab has a redesigned A-pillar, chisel-shaped nose and extended doors and wheel arches. All mirrors are replaced by cameras. Unlike the Mirrorcam-equipped Mercedes Actros, the main rear-view cameras are mounted below door window level. Project manager Georges de Turnay said this makes it easier to judge their width, and keep clean.

These changes improve aerodynamics, and further fuel savings will come from prototype Michelin low rolling resistance tyres.

Renault is working with Total to test low-viscosity lubricants in the standard powertrain. Engine oils of 5W-30 and 0W-20 viscosities

are being trialled to explore fuel savings from reduced pumping and churning losses, and any impact that they may have on durability.

Technology will enable the truck to adapt to changing road conditions. Navigation and traffic information, weather data and even information from the tyres will manage road speed and engine cooling. Coolant circulation can be slowed if demands are low. The driver is kept informed by a comprehensive human-machine interface. Future developments include the introduction of a Rankine energy-recovery device into the exhaust system.

Renault Trucks is now on its second-generation of electrical vehicles, ranging from the 3.5-tonne Master to 26-tonne Range D trucks. Brief runs in both showed they are quiet, relaxing drives, and surprisingly quick off the mark.

Unlike its Volvo Trucks corporate cousin, Renault does not see gas as useful in long-haul transport. The urban sector is a different matter, at least in the short term, and the Range D vehicle is also available with a proprietary CNG city bus driveline, consisting of a 9-litre 316bhp Cummins engine and six-speed Allison transmission. **TE**

