

Given the industry's continuing concern with cutting fuel costs and emissions, John Challen looks to the future, with some of the most interesting revelations from this year's IAA show



# Hannover: the alternative view

The vast majority of production vehicles on show at this year's IAA commercial vehicle exhibition in Hannover were powered by conventional, reliable diesel engines – albeit far cleaner versions, thanks to engineering ingenuity invested in meeting the forthcoming Euro 6 emissions legislation. However, elsewhere in the halls there was plenty of talk about future hybrid and electric options.

One of the drivers of alternative powertrain development is post-Euro 6 legislation, according to Bernd Maierhofer, who is responsible for R&D at MAN. Speaking at the IAA event, he said: "From a pollutants requirements standpoint, we are convinced that now there is nothing else to [achieve], so we will concentrate on reducing CO<sub>2</sub>; whether it is with the engine or the complete vehicle."

## Beyond Euro 6

Maierhofer doesn't think the industry will see Euro 7 legislation following the same format as the previous six incarnations. "Hopefully not, because with Euro 6 we have already reached an emissions standard where all of us have difficulty measuring pollutants. We are now counting particulates, using very sensitive and expensive equipment," he explained.

So, MAN's plans in the powertrain department are now centred around reducing CO<sub>2</sub> – and hence also costs, because of the link with fuel combustion. And

that means alternative propulsion has a major part to play. "We are looking at where hybrids make sense," confirmed Maierhofer, pointing to the success already achieved with its hybrid city buses, which regularly record a 25% reduction in fuel consumption against conventional diesel engine versions.

The next step for MAN and its hybrids will, he revealed, be in heavy-duty trucks where he believes the gains in fuel efficiency could be in the region of a relatively modest, but nevertheless welcome, 5–8%. "We see the possibility [of hybrids] for trucks, but not based on what was promised years ago, where people were suggesting pure electric propulsion and city distribution trucks using hybrid powertrains," explained Maierhofer. "Our customers have to drive their businesses: green marketing is one thing, but [powertrains] must also fulfil their main requirements."

For him, the future is about a progression. "In the long-haul sector, we'll use the same [diesel] engines. Most of the time, trucks drive in diesel mode and this is the most efficient, with the parallel hybrid technology providing support when the truck is [accelerating] and providing for regeneration when going downhill," he stated.

His belief: a 40kW electric motor will provide the desired performance and economy improvement. "When there is a breakthrough in battery prices, there could be a different [pure electric] system for city trucks," he added. "Maybe within eight years."

**Above: not yet a heavy hybrid, but MAN confirms that hybrid power will be coming soon to heavy trucks on streets near you**



**Fuso is hoping to increase its range of hybrid offerings beyond the Canter**

Fuso, too, is working on heavy hybrids, revealed Kai-Uwe Seidenfuss, who looks after sales and aftersales at the company. Fuso's views follow a four-year trial of a dozen Canter hybrids, where 500,000km were covered and a claimed 10,000 litres of fuel saved. Having received positive feedback on that project, Daimler's Japanese arm is now looking at further efficiency improvements further up its truck range.

### Big in Japan

"In testing, we have achieved 10% fuel savings on a prototype Super Great in Japan. I would guess that it will be the next hybrid vehicle, because it makes no sense to go into medium-duty hybrids. If you have done light-duty and heavy-duty, then medium-duty would only be a bridging technology," he said.

Given the Japanese experience with hybrid trucks, Seidenfuss believes that Fuso's hybrid work has implications elsewhere in the Daimler family. "The intent is that we leverage the know-how we have gained from Fuso and the Japanese in other areas of Daimler, such as Mercedes," he stated. "The big advantage is that we have the platforms and the commonised powertrains, which makes it easier to hybridise vehicles."

The need for a larger hybrid system, however, remains the challenge – although Fuso is working on it, he promised. "The big issue is power, as opposed to the capacity of the batteries," he insisted. "We

need to generate over 100kW per hour, and a battery for that energy is the difficult part. We are currently looking for 150kW peak for the motor."

Meanwhile, Nissan, which featured two concept Cabstars on its stand at IAA – both using components from its E-NV200 electric van – believes alternative powertrains are vital to the success of this company. According to Thomas Ebeling, general manager for product strategy at Nissan, its drive for the number one spot in commercial vehicles is based on a targeted approach.

"There is a good opportunity for electric vehicles to play a major role in distribution work, and we see more and more evidence of that," said Ebeling. "We are looking at different ways of reducing CO<sub>2</sub> – for example, a Cabstar for cold chain distribution, with an alternative powered cooling unit on the back of the cab," he explained. "This is a standard vehicle, but with refrigeration driven by a battery pack from a Nissan LEAF and a 600W solar panel on the roof [rather than its own diesel engine, auxiliary or PTO]."

With the Nissan vehicle range covering two to eight tonnes, there are several powertrain options and Ebeling says Nissan's research is far-reaching. "We are investigating hybrids and fuel cells [for commercial vehicles], as we have used these in the passenger car market and believe they could work for CVs, too," he revealed. **TE**

## New Euro 6 conventional trucks

In the conventionally powered world, one of the stars of the IAA commercial vehicle show in Hannover was DAF's Euro 6-ready flagship, the new XF. Unveiled at the event, and described as completely redeveloped, the XF is claimed to offer major improvements in fuel economy, total cost of ownership, maintenance and performance – as well as the highest levels of driver comfort in its class.

Taking the Paccar 12.9-litre engine as its base, revisions to meet the Euro 6 standard include the deployment of a VGT (variable geometry turbocharger), EGR (exhaust gas recirculation) and active DPF (diesel particulate filter). The common-rail diesel engine will be available in 410bhp, 460bhp and 510bhp output variants, with peak torques ranging from 2,000 to 2,500Nm, available from 1,000 to 1,425bhp. Underpinning the new DAF truck is a revised chassis, featuring lighter axles front and rear – helping to keep the new XF just 50–90kg heavier than the Euro 5 model. At the rear, a new Stabilink structure incorporates an anti-roll bar and a new fifth wheel mounting plate. Up front, the new steering gear is mounted on a multi-functional casting, eliminating the need for a separate steering box mounting.

Meanwhile, despite being launched in July, Iveco's Stralis Hi-Way made its show debut in Hannover. The new tractor unit promises to reduce total cost of ownership by up to 4%, and features an upgraded cab, better aerodynamics and improved safety features. Engines powering the new vehicle are equipped, courtesy of Fiat Powertrain Technologies (FPT), with a catalytic reduction system, dubbed Hi-eSCR, which makes this the only heavy-duty truck reaching Euro 6 without EGR (exhaust gas recirculation). The truck was also awarded the title International Truck of the Year – last year won by the Mercedes-Benz Actros.

Another highlight of Iveco's stand was its expanded Trakker line-up, which is now offered in two variants: Hi-Track and Hi-Land. The former has a high roof and sleeping compartment, while the latter offers a shorter cab. Power comes from 8-litre and 13-litre engines, with outputs ranging from 310 to 500bhp.

More heavy-duty debuts were on the MAN stand, where visitors had their first opportunity to see its new TG series. Euro 6-ready TGX and TGS trucks match the fuel economy figures of their Euro 5 predecessors, claims MAN. And, for fleet managers, there was also the latest-generation telematics from MAN – unsurprisingly called MAN TeleMatics.

