LCVs power ahead

Van and LCV manufacturers have shown their hands with new hybrid and electric models, but Steve Banner confirms that there is plenty of life left in the internal combustion engine and that there are other issues to consider

Van powertrain developers are increasingly concentrating on cutting fuel consumption and CO_2 emissions, without compromising their vehicles' ability to carry out the jobs required of them, or the price. Innovations such as engine downsizing, advanced diesel technology and so-called micro-hybrids (not a diesel-electric hybrid, but involving related fuel-saving technology, such as auto stop-start) are among the answers.

Citroën's Berlingo e-HDI Airdream – powered by a Euro 5-compliant 1.6-litre diesel engine, developing 90bhp at 4,000rpm and a peak torque of 215Nm at just 1,500rpm – is a case in point. Touted as a micro-hybrid, the French manufacturer's latest environmentally-friendly LCV features stop/start technology that kills the easily restarted engine every time the driver allows it to idle. Consumption of diesel – typically top of any operator's list of costs – falls by up to 15% on city centre work, says the manufacturer, which makes the modest premium for the vehicle – from just £145 – recoverable in a few fill-ups.

Ford has followed in a similar direction with its latest ECOnetic version of FiestaVan. The small Ford also comes with auto start-stop, as well as other refinements designed to cut CO_2 and fuel usage. Enhancements include: low-rolling-resistance tyres; revised gear ratios; and an aerodynamic pack, made up of an undershield and wind deflectors.

Volkswagen's Caddy, specified with a dual clutch gearbox (DSG), is a popular choice

Boxing clever

When it comes to transmission choice, persuading van operators to specify anything other than a manual gearbox has had only mixed success. And that's still the case. While some LCV manufacturers offer automated manual gearboxes on certain models (claiming a reduction in fuel bills, driver fatigue and clutch wear), the percentage uptake is no more than single figures, because few operators will pay the higher front-end price.

Take Vauxhall: less than 5% of Movano buyers opt for its Tecshift automated box – although the company admits it only recently introduced the option on that model. Volkswagen reports a little more success (possibly thanks to praise in the passenger car market) with its Direct Shift Gearbox (DSG). In all, 7.4% of Caddy and 11.5% of Transporter buyers (including passenger-carrying models, such as the Caravelle) took DSG last year – which was a surprise. "There was more demand for it than we were able to supply," states a VW spokesperson.

Volkswagen's DSG can be used either as a manual or an automatic and features two wet clutches, rather than a torque converter – in effect, making it two gearboxes in one. One clutch takes

Left: Citroën now offers a range of fuel-efficient vans, including a micro-hybrid Berlingo

care of the even-numbered gears, while its stable-mate looks after the odd numbers, plus reverse. So there is no loss of traction during gear changes.

Currently available as a six- or seven-speed option, the dual clutch gearbox family is set to grow by the end of this year. Coming soon, for example, is a 180bhp, 2-litre diesel VW Amarok 4x4 double-cab pick-up, complete with eight-speed automatic. This combination, says the German manufacturer, offers even better fuel efficiency, because the spread of gears means the engine works efficiently throughout the rev range.

Body builders cut bills

Alongside the vehicle manufacturers, many body builders are also prioritising reduced fuel consumption in their development work. Last year, for example, Bevan Group launched its stylish Icon – a highly aerodynamic Luton body designed for 3.5-tonne chassis, developed with Cranfield University and Hatcher Components. Managing director Anthony Bevan says this LCV should return fuel savings of up to 12%, compared with the company's standard Luton ("which is pretty aerodynamic anyway") and 15–20% against traditional box Lutons.

"Furthermore, Icon can handle a 1,200kg payload and we're looking at using plastics for the rear frame, which should increase capacity by another 20kg to 30kg," insists Bevan. And he adds: "Factory-built vans have rear wheel boxes that intrude into the load area, don't have the internal height and are more difficult when it comes to fitting tail-lifts than the Icon."

Operators primarily concerned with moving goods in city centres – who rarely tackle motorway trips that show aerodynamics to their best advantage – may take the view that ease of loading and unloading is the priority, not fuel-efficient powertrains. In that case, it's worth looking at, for example, Supertrucks' Space Van 3.5-tonner.

With bespoke AL-KO chassis, plus a front-wheel-drive package typically sourced from Citroen (Relay), Peugeot (Boxer), Fiat (Ducato) or Renault (Master), this LCV offers a load deck height of as little as 370mm, if you specify rear air suspension.

For those wanting to go lower, options are available, such Roadload's SuperLow. Using a Boxer cab, engine and gearbox, it boasts a cargo body that can be dropped to 200mm, thanks to its Dunlop self-levelling rear air suspension. Gross weights of the vehicle range from 3.5 to 5.6 tonnes; payload capacity goes up to 2.9 tonnes; while load cubes range from 16.8m^3 to 35.8m^3.

And if it's all about flexibility, LCV chassis cab manufacturers such as Renault UK are doing all they can to make body builders easier, contends conversions manager Gareth Matthews. "For instance, we provide body-mounting points inboard and outboard of the chassis rails," he says. "Technical drawings are freely available and we operate a converter website and hot line."

Such facilities could prove invaluable once European Community Whole Vehicle Type Approval (ECWVTA) – coming into force in October 2014 – starts to make its presence felt. "While the bigger bodybuilders are a long way down the road towards compliance, smaller ones are hoping it will all go away and will rely on the IVA [Individual Vehicle Approval] scheme instead," comments Iveco's UK product director Martin Flach.

Easing the process, Iveco has recently joined forces with Ingimex to offer tipper and dropside bodies on Daily 3.5-tonne chassis cabs and chassis crew cabs under its revived, hassle-free DriveAway Options programme. Lutons are also being constructed by Alloy Bodies on Daily 3.5-tonne chassis under the same scheme. The entire vehicle is covered by an unlimited-mileage, three-year warranty in each case.

A mix of factors determined Iveco's choice of Ingimex and Alloy Bodies, says Flach – including their design capabilities. "There are still some body builders whose design office consists of Fred doing the drawings with chalk on the factory floor," says the Iveco man. He admits he is exaggerating, but makes the point that, with the advent of ECWVTA, such businesses will not have much of a future. TE

Tipper and Dropside versions of Iveco's Daily are now offered alongside the conventional vans