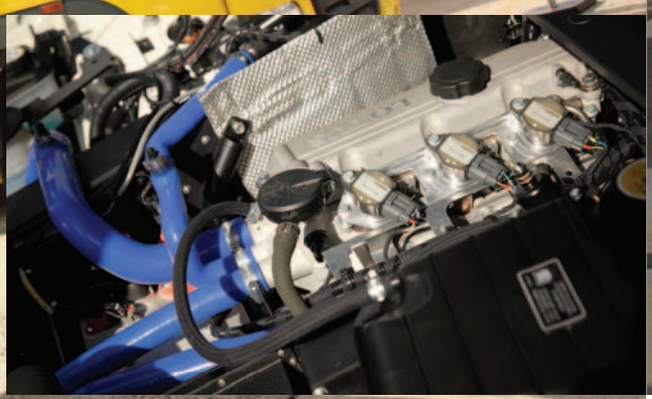

Carbon-free

Clean commercial vehicles starred as Millbrook Proving Ground hosted currently available and emerging low carbon truck and van technologies. John Challen reports on LCV 2010

September will be remembered as a month of numerous events designed to raise awareness of alternative propulsion options. From the IRTE's biofuels conference, to Prince Charles' Eco Rally, to LCV 2010 – the low carbon vehicle event held at Millbrook Proving Ground – the focus has been on reducing CO_2 and imagining life beyond fossil fuels.

LCV 2010 was organised by Cenex, in partnership with the SMMT (Society of Motor Manufacturers and Traders), the Technology Strategy Board (TSB) and UK Trade and Investment (UKTI). It offered the opportunity not just to learn about the advanced engineering and technology likely to be used in the vehicles of tomorrow, but also the chance to drive some of them.

Cenex – the UK's first Centre of Excellence for low carbon vehicle technologies – had plenty to talk about at the event. One product launched at the show was a simulation tool aimed at helping fleet operators understand the impact of bringing different types of low carbon vehicles into their existing fleets. Cenex introduced the tool and an associated free 50-page guide, which includes four case studies looking at low carbon vehicles working in all sorts of real fleets.

Robert Evans, CEO of Cenex, explained that the tool enables accurate estimation of the carbon reduction performance of different transport fuels – providing whole-life cost and emissions predictions for each fleet option to help identify operators' best low carbon technology solutions. He also stated the tool should help operators to cut the requirement (and cost) for trialling options in the field. The guide provides step-by-step assistance in planning and conducting a trial of low carbon vehicles. It also offers plenty of information about how the technologies function.

Operators will make their own minds up about what they do or don't need to do, but Evans said: "Fleet operators face challenges in responding to the need to lower carbon emissions and to reduce the energy use of their vehicles." And he added: "We aim to help managers and operators meet these challenges through informed decisions on the best way to reduce carbon in their vehicle fleet."

A wide selection of green technologies was on show during LCV 2010. Visitors were also able to sample the offerings themselves

dreams

Interestingly, Chris Walsh, head of technical support and consultancy at Cenex, also ran a seminar to launch the tools and the guide to operators "wishing to de-carbonise their fleet". His explanation: "The tool is a sophisticated simulation package that takes your fleet and creates a model based on drive cycle activities and vehicle attributes. It puts this data into mathematical tables that can alter the powertrain type to a range of vehicles and predict the emitted carbon and the whole life cost changes."

Hope from hydrogen?

Cenex also put its weight behind a major hydrogen fuel infrastructure roll-out project. With deployment of hydrogen vehicles set to start in 2015, the Bristol Accord UK HyNet project will conduct scenario planning for the creation of a robust hydrogen infrastructure. Challenges to be addressed include the development of a network of hydrogen stations across the UK, supporting R&D and ultimately assisting with vehicle roll-out.

Cenex will provide national leadership and continuity throughout the UK HyNet project, with the work supported and assisted by interested stakeholders from both academia – such as the University of Glamorgan – and the automotive industry. "The UK HyNet project is an important initiative, because the mass commercial availability of hydrogen fuel cell vehicles is going to be a reality very soon," stated Evans.

While the jury still remains out on fuel cell vehicles, despite Evans' beliefs, there was plenty of technology on show that is already in operation. Iveco had a wide selection at Millbrook. Vehicles ranged from a 21-tonne Stralis Active Day 6x2 rigid that runs on compressed biomethane, to a natural gas-powered EcoDaily 40C14G chassis cab, operated by Tesco.com.

A 19-tonne Stralis Active Day rigid, modified by Dutch dealer Schouten, also made its debut at LCV 2010. It featured four compressed natural gas tanks and a cryogenic liquid natural gas tank, which stores LNG at -160°C and so has much greater energy content by volume.

Meanwhile, Transport Secretary Philip Hammond was also in attendance on day two of the event, specifically to announce the recipients of grants worth £24m. Split between six projects, the money will be used to develop low carbon vehicles and commercial vehicles will have a big role to play. "These projects represent cutting edge technology that has the potential to transform the way we travel in a way that will stimulate a vital and growing market," said Hammond.

One of the winning projects will be led by RCV (refuse collection vehicle) specialist Dennis Eagle. The hybrid integrated urban commercial vehicle (HIUCV) will be a lightweight RCV, designed for urban environments. Apart from fuel efficiency, project goals for the new vehicle include excellent manoeuvrability and quiet operation, with the HIUCV targeted to halve the overall carbon emissions per tonne of waste collected, compared with current best-in-class RCVs in the urban environment.

Another project, led by Intelligent Energy in collaboration with Revolve and Caparo, will deliver two prototype lightweight electric vans, with diesel range extenders. The project, which has already attracted input from Royal Mail and DHL, will hopefully result in a manufacturing operation producing 10,000 lightweight electric vans a year from 2014. A hydrogen fuel cell version of the van is due to be launched in 2017.

New product focus

One of the aforementioned vehicles available for evaluation at the Bedfordshire test track was the maxEV, manufactured by RLE International and Energetique, and launched at the event.

maxEV uses a VW Caddy Maxi as the donor vehicle, with a derivative of Energetique's evMe powertrain technology. This unit allows for what the company describes as "high performance", while delivering an effective range of 150km that can be extended to 200km. Energetique believes the maxEV platform provides fleet operators with another option for electrification of their fleet vehicles, with an effective 600kg payload. A customised version of the platform, suitable for limited post code pick-up delivery routes, is currently being investigated with a large fleet operator.

"Increasing awareness of corporate social responsibility, allied to government pressure through incentives and penalties, is starting to make reducing carbon emissions a high priority item," said Paul Bridden, head of engineering, RLE International UK.

Bridden reckons that, in the future, the vehicle's charge may be optimised to meet the driving needs of the following day. Advanced charging technology, under development, will enable fleet operators to migrate towards proactive or 'prognostic' charging and take advantage of variable electricity tariffs, he said.

The message from the transport industry, though, seems to be 'more of the same, as quickly as possible' – but only if the price is right. Maybe that challenge is bigger than any engineering problems. TE