



Zero emissions

In Coventry, Travel De Courcey is successfully running three big all-electric Optare Versa EV single-deckers on a park-and-ride scheme. Will more PSV operators be tempted to make the big electric switch-over? Brian Weatherley investigates

There's a quiet zero-emissions revolution going on in Coventry. Since last June, Midlands PSV operator Travel De Courcey has been running three Optare Versa EV all-electric single-deckers on a park-and-ride scheme to and from the city centre. That might not sound earth-shattering, but, with a capacity of 50 passengers, the 11-metre Versa EVs are the largest all-electric buses currently running in the UK.

Each is powered by an Enova Systems P120 drivetrain with a 120kW traction electric motor, offering 650Nm torque and coupled to an automated transmission. Energy is stored in 56

Valence, maintenance-free lithium-lon/magnesium-phosphate batteries that can be topped up on the move via regenerative braking.

With inner city air quality sitting high on the agenda of both national and local governments,

Optare's deputy CEO Glenn Saint sees a growing interest in electric bus operations. "The Green Bus Fund, now in its fourth iteration, has got people interested in

electric vehicles, because this time around the government has incentivised electric vehicles more than hybrids," he explains. "There's now an 80% grant towards the difference in cost between a standard bus and an electric bus – but only 50% is available for a hybrid bus."

For Saint, that's changed everything. "[Electric buses] are now a real proposition... So new orders, that would probably have been required anyway, have been specified as green, low carbon buses." Several local authorities are also looking at EVs outside Green Bus Funding, notes Saint. "While the cost of these vehicles is a lot higher, there's a payback over about six or seven years, as the cost of electricity for the bus is far less than diesel. And if you lease the bus, while the lease costs are higher, the saving on fuel cuts in quite quickly. Within the first year you start making savings," he asserts.

Predictable routes

With their highly predictable routes, city buses are ideal for electric and diesel-electric hybrids, not least as their batteries can be regularly topped up by regenerative braking during their stop-start cycles. Moreover, Saint says of the Versa EV: "In normal operating conditions the range is around 90 miles. But, by correctly positioning charging equipment along the route, or by using the optimum number of buses, you can also make an entire local bus route work with electric traction."

The latest generation of fast-chargers has

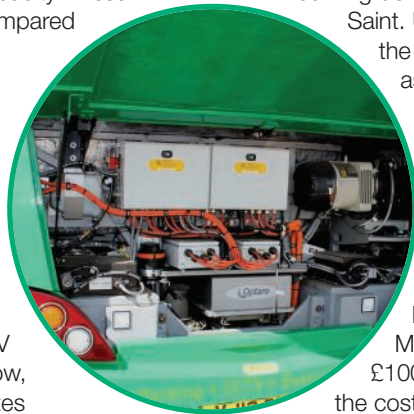


undoubtedly increased the viability of electric vehicles. With an ABB Terra 51 fast charger at the main car park, Travel De Courcey can re-charge the batteries in its Versa EVs to full capacity in less than two hours during the day, compared to the standard six to eight hours overnight. Consequently, it's potentially doubled their daily-range (75–95 miles on a single overnight charge), leading to greater operational flexibility.

Fast charging

“Previously, a limiting factor for electric buses in Britain has been the time it takes to recharge an EV battery,” acknowledges Saint. “Now, fast charging makes far more routes possible, as the bus can be easily charged during a lunchtime layover, or at other quiet periods. In the Coventry park-and-ride operation, charge stations have been installed at both ends of the route to allow opportunity-charging throughout the working day.”

Greater commonality between chargers is also



helping the all-electric cause. “They’re now operating on a standard charging protocol, so we can use any charger. And price of the chargers is coming down considerably, too,” reports

Saint. Using cheap off-peak electricity, the cost of overnight charging can be as little as £6.40. With fast-charging added, Travel De Courcey is spending around £10 per day, per vehicle.

Travel De Courcey invested some £400,000 in the project, with additional funding of £300,000 coming from the Green Bus Fund, while Centro – the West Midlands ITA – contributed £100,000. Coventry City Council met the cost of installing the fast-charging infrastructure.

As well as its Versa EV and smaller Solo zero-emission models, Optare is considering other all-electric buses, including double-deckers. And while the Travel De Courcey trio represents a modest start for big electric buses, Saint is adamant that the market and the interest are there. **TE**



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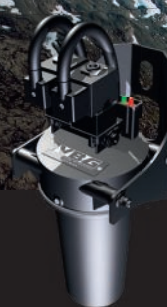
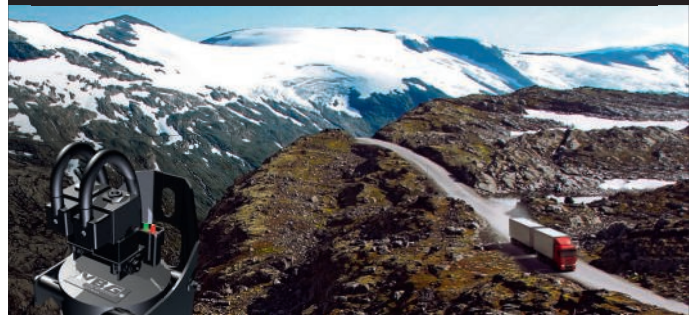


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