

# Mixing up the fleet

**A**chieving a range of just over 70 miles between recharges, and based at Tarmac's site at Washwood Heath in Birmingham, the 27-tonner makes up to seven deliveries of ready-mix concrete a day around the city. The rotating drum relies on power from the Renault's traction batteries.

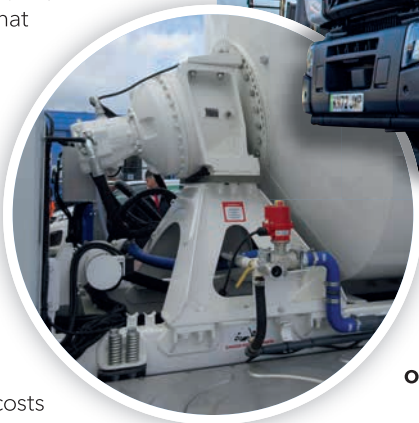
McPhee's parent company TVS Interfleet (TVSI) claims that the newcomer will save 42 tonnes of CO<sub>2</sub> a year when compared with its closest fossil-fuel equivalent.

"It costs two-and-a-half times more than the equivalent diesel model," says Tarmac's senior manager, logistics development, Ben Garner. However it costs half as much to operate, he adds.

Hardox 500 Tuf special steel has been used to construct the mixer drum in a bid to save weight and benefit the truck's range. Its strength and hardness mean that a thinner gauge of metal can be employed than would usually be the case without sacrificing durability. At 49kg, the weight saving made on the drum is limited, but every kilo helps.

The drum is electronically controlled to optimise the quality of the concrete it contains while ensuring that it does not rotate unnecessarily. Energy usage is minimised as a consequence.

Some of the new Renault's features could be deployed on diesel mixers, including its anti-rollover technology. Getting on for 40 mixer rollover accidents occur annually. IRTE recently published a revised guide on preventing rollovers (see [www.is.gd/ozegok](http://www.is.gd/ozegok)). Steps adopted to cut the risk of such accidents include mounting the mixer's 350-litre water tank at a far lower level than usual to reduce the vehicle's centre of gravity.



**An all-electric concrete mixer built on a battery-electric chassis has joined Tarmac's 2,500-strong fleet. Equipped with a 5.8m<sup>3</sup> mixer drum by McPhee Mixers, it is the first of its kind in the UK, reports Steve Banner**

Drum rotation can contribute to the risk of a rollover, particularly if a driver enters a curve too quickly, so controlling rotation electronically brings a safety as well as an energy-saving benefit.

A more robust restraint system has been installed to keep the drum in place if there is a danger of it breaking away from the chassis and putting the truck on its side. It now takes 1.5g of force to dislodge it, says TVSI, compared with the 0.5g generally viewed as acceptable on existing mixers.

The base vehicle, a Renault Trucks E-Tech D Wide 6x2, uses lithium-ion battery technology with a capacity of up to 375kWh. Twin electric motors deliver a maximum power output of 370kW/500hp with a continuous output of 260kW/350hp, and maximum torque of up to 850Nm. The truck is fitted with a two-speed transmission.

Charging times vary from less than two hours with a 150kW DC fast charger to 10 hours using a 22kW AC socket.

Unfortunately there is a regulatory glitch that may make some truck fleet managers think twice before they embrace battery power. While a diesel 6x2 is restricted to a maximum 26 tonnes, a government dispensation crafted to compensate for the burden of the battery pack enables an electric model to operate at 27 tonnes.

Draft regulations have been published which increase the 1.0-tonne electric dispensation to 2.0 tonne. However this will not benefit maximum-weight artics or eight-wheelers any more than the existing concession does, because the axle weights permitted have not been amended. The bulk of Tarmac's UK mixer fleet employs 8.0m<sup>3</sup> drums on eight-wheeler chassis so the dispensation could in fact only apply to 200 of the company's trucks, says Garner. "It's frustrating and a glaring anomaly," he remarks.

Trade associations are pressing for the issue to be resolved before the new regulations come into force. **TE**