

The passenger car market has seen it most prominently with Tesla, but now the commercial vehicle sector is set to be shaken by EV startups, writes John Challen

The UK has set 2030 as the target to end production of diesel and petrol engined passenger cars, but heavier vehicles have had a reprieve. The government stated back in November that a consultation will be launched into how and when they will be phased out. As yet, no firm date for that consultation has been made. In the meantime, new entrants to the market are gearing up to offer battery alternatives to combustion drivelines.

Clearly there are – and will be more – electric trucks from legacy manufacturers. Many OEMs have either already introduced them or set out their plans for EVs. They hope customers will stick with the tried and tested brands.

For start-ups – including Volta Trucks and Arrival, which were contacted for this article – there is no doubting the size of the challenge ahead. Making a mark in an already crowded segment will not be easy. However, starting with a blank sheet of paper gives them an edge.

In the case of Volta, customers get the Zero (pictured above), a 16-tonne 4x2 rigid offering 8.6 tonnes of payload and a theoretical driving range of 90-125 miles via e-axle. “This range is more than sufficient for the type of vehicle we’re building,” says Ian Collins, engineering and procurement director, Volta Trucks.

The original brief of the Zero was around urban distribution, not just from the point of view of integrating an electric powertrain for zero-emissions operations, but also from the driver’s perspective (see computer drawing of cab, right). “Direct Vision has been a big focus for us,” explains Collins (see also



www.is.gd/apikij). “When you look at accidents caused by side and forward blind spots, electrifying the vehicle gives you the opportunity to repackage it and free up space in the cab. Therefore, in the Zero, the driver sits at the eye-level of pedestrians, which reduces forward blind spots to a minimum.

“We wanted an airy environment, one that is comfortable with improved ingress and egress over existing models, which is better for the driver,” adds Collins. “We are also able to offer safety and usability benefits from the package. Factors such as driver absenteeism and retention are big issues. We want something more like a car or van than a heavy truck, and it is something we are working on.”

The Volta Zero test fleet will be built

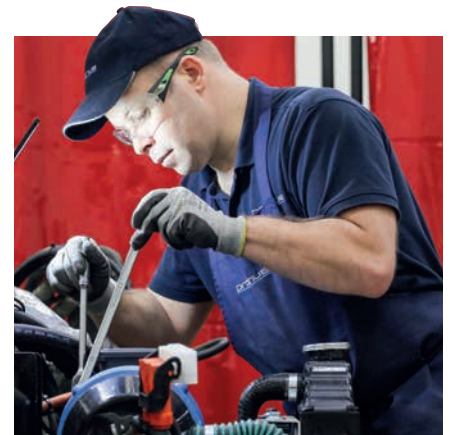


The Volta driver's seat is in the centre of the cab

towards the end of the year, with series production due to start at the end of 2022. London and Paris have, so far, been named as the two target cities for deployment, given that planned diesel vehicle bans have been made public.

SWITCH TO STARTUPS

Winning over some drivers might take a while; the same might be said for operators. A competitive TCO (total cost of ownership) will help, even if they are conservative about the technology, says Collins. “There is scepticism in terms of whether EVs will be robust and durable enough, and we’ve got a challenge to demonstrate we can engineer a vehicle that fits the bill,” he admits. “We’re focussed on technology and the supply chains that already exist. We aren’t taking



Prodrive was an engineering partner of Volta

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Ian Collins



Arrival van features include digital mirrors



Chassis cabs and people-carriers are planned

technology risks because we will be facing a demanding use case, and we have to demonstrate the product will work for them."

From a service, repair and maintenance point of view, the offering from Volta will be customer-led, so it's too early to predict what any potential network might look like. "If we were selling a global product, it would be a big task, but because we are focussed on a city model, we can position service centres within the zone and service the customers in and around the city," says Collins. "We are scoping cities out and will look to see how volumes develop per city and ensure we have suitable and adequate coverage to support those cities. A lot will depend on demand."

The Volta charging model is based on the vehicles 'refueling' at their depot, which makes sense as they are stationary (either overnight or while being reloaded) for an adequate amount of time. "We are working with a number of partners supporting us on the infrastructure side, so that we can go and have a conversation with fleet manager to effectively implement the things they would need to think about moving from ICE fleet to electric fleet."

An emerging competitor is Arrival, although as it offers both electric single-decker bus and van options, the company is hedging its bets as it

looks to break into the competitive commercial vehicle segment. Clearly very ambitious, Arrival recently listed on the Nasdaq stock exchange with a valuation of \$13bn - one of the largest amounts for a UK tech company.

"We've currently got one small vehicle that is built in bigger volumes and a bigger vehicle that holds lots of people inside it. In between, there are a lot of other opportunities in the future, such as trucks," explains Ben Jardine, VP of product strategy, heavy commercial vehicles, Arrival.

"Every commercial vehicle has a purpose - whether it's a van or a bus - and every operator wants to do something different to their competitors," states Jardine. "We needed to be as broad as possible, but not spend a lifetime on different configurations. When we come to market, we might find that the vehicle has to evolve and then we have to decide whether to introduce bodybuilders or do it all ourselves."

MEETING CUSTOMERS' NEEDS

"We've built the company around giving the customer the product that it absolutely needs, rather than traditional OEMs who typically give a shell of the product and then the customer works with a bodybuilder or specialist vehicle manufacturer from there," he continues.

Without an established pedigree, what the company does have is - like Volta - a completely fresh approach to the vehicle market, and new ways of doing things. "The rise of the EV is a big step change, but whereas most OEMs only provide the vehicles, we are offering the complete solution," he adds. "We've got the fleet management system, telematics, CCTV and everything else embedded into the vehicle design. We also have a division dedicated to developing charging systems because part of the TCO [total cost of ownership] when you supply an EV - outside of the capital expenditure - is the whole-life costs."

Also new from Arrival is servicing and maintenance. "We're going at it with a more 'gig economy' approach," Jardine explains. "We won't have local dealers or a specific dealer network, but most of the vehicles will go to fleets who have their own depot and workshops. We will [have] someone coming to your premises to fix or service the vehicle. But to get to that point we need orders."

Finally, the all-important price is something where Arrival thinks it has an edge. "We can't say we're the same price as diesel, but if you compare our van's target price to something like a Mercedes-Benz eSprinter, we're much closer to the diesel Sprinter price than the electric Sprinter," he concludes. **TE**