

In small packages

When vans are too big, e-cargo bikes may be the answer, says Matthew MacConnell



As the UK progresses to net zero, sightings of diesel vans and trucks are becoming few and far between in busy towns and city centres. Carbon neutrality aside, who enjoys navigating a city centre in a large LCV anyway?

Food delivery companies positioned in built-up areas often use bicycles but, with technology advancing, electrically assisted bikes and vehicles are taking precedence. These bikes and vehicles take up less room and ease congestion, but what's available for last-mile deliveries – and how exactly could they benefit fleets?

E-bikes have been zooming around our streets for some time now, and depending on the bike, some can charge from empty to full in 2-3 hours and boast ranges of up to 160 miles. Of course, the latter depends on how much electrical assistance is used, how much weight is on board, what the terrain is like and how cold the temperature is. Most e-bikes use lithium-ion batteries which, like electric vans, means the range will dip in colder weather.

Tip the scales

While most e-bikes have luggage platforms to accommodate cool boxes, baskets and bags, the bike will have a weight allowance and exceeding this could damage running gear. Enter e-cargo bikes.

These e-cargo bikes come in weird and wonderful shapes; some even resemble LCVs and can carry upwards of 250kg, and transport between 260-300 litres. It's worth noting that e-cargo bikes can be more expensive than regular e-bikes, but large brands, such as Raleigh, use reputable components. Paying a premium could result in less future expenditure.

Raleigh offers its Stride 2 and 3 Family Cargo Bikes. Both cost around £4,000 and feature a 40-mile range, built-in lights and mudguards and have a Bosch Performance CX Cargo Line motor, which adapts power accordingly depending on weight. Both bikes have the ability to carry up to 100kg.

There are also modular e-cargo bikes. Like LCVs, these have a flatbed-like area at the rear where boxes, seats and baskets can be mounted. Meanwhile, cargo trikes are also becoming increasingly popular. Instead of the box or platform being aft of the bike, it's mounted at the front with two wheels at either side for support. Like the regular e-cargo bike, these carry up to 100kg of goods.

Regardless of transport mode, expanding a fleet costs money.

However, if a fleet is expanding, or the company is looking to transport larger items, there's no need to bulk order e-cargo bikes, as most e-bikes can be adapted. For example, London-based e-bike company Volt offers a trailer-based system. This innovation became reality after customers wanted a cargo-carrying option, but didn't have the space to store a full-size cargo bike, or didn't have a budget to buy one. The Volt collapsable trailer system attaches to a standard Volt e-bike, thus transforming it into a delivery vehicle.

"With an e-bike plus trailer combo, you get the best of both worlds. Use the e-bike alone for commuting, errands or leisure – and then attach the trailer only when you need to move cargo," says Lyle Metcalfe, founder, Volt Electric Bikes. "In congested city centres, e-bikes often bypass traffic snarls that tie up vans. Moreover, running an e-bike costs just 10p to charge, a massive saving versus running a van. Add to that no parking or congestion charges, ULEZ or road tax and that means lower operational costs for businesses, more convenience, active transport and a greener outlook."

Volt's collapsible trailer can be attached to one of its e-bikes - useful if you don't have the budget for an e-cargo bike, or the space to store one



Bike benefits

In 2024, Amazon launched its first e-cargo bike deliveries to Norwich customers. The electric cargo bikes were part of a £300m investment to help electrify and decarbonise Amazon UK's transport network. The e-bikes replaced traditional delivery vans across 40 cities in the UK. Joining Amazon are FedEx Express, Delivery Mates and Northgate Vehicle Hire, the latter supplying electric utility vehicles and e-cargo bikes via its micromobility program.

Newcastle-based micro-company if.Vehicles is developing a lightweight, battery-operated micro-container delivery vehicle. It features an extended vehicle frame that will utilise reusable containers for goods distribution.

"No-one else has made a dual-mode vehicle like this," claims Bill Clare, if.Vehicles co-founder and chairman of the board. "You drive it as a road vehicle, but it can also be pulled. This dual mode changes how you do things. Much of what I've seen says you can't have a vehicle that encourages economic growth and is net zero compliant, but we'll prove them wrong."

In its final form, the if.Vehicles bike will weigh c.100kg and be powered by a 0.5kW motor. Like an e-cargo bike, this acquisition could reduce company costs. Unlike an electric van fleet, which requires in-depth infrastructure, the if.Vehicles e-bike can be charged via a domestic plug.

"Our vehicle with the 0.5kW motor, will carry 400kg overall – driver and vehicle weight aside, this leaves 200kg," adds Clare. "No van courier who is carrying parcels in urban areas will be close to carrying 200kg in weight."

"You drive it as a road vehicle, but it can also be pulled. This dual mode changes how you do things"



Climate change considerations

While these solutions work well, there is the issue of British weather, which can pose some problems. Some e-cargo bike companies offer canopies, but creature comforts – such as those found in modern vans – will be limited and this is where micro utility vehicles come in.

Bradshaw Electric Vehicles offers an alternative solution to the e-cargo bike with its Goupil G4 and G2 box vans. Measuring just 1.574m-wide, and 1.893m-tall, the Goupil G4 has four body options (pickup, cage pickup, cage tipper and pickup PVC body) and comes with a fully enclosed cabin with central locking. In pickup form, it'll carry up to 1,200kg and return a range of up to 101 miles depending on the chosen battery. Four battery options include two lead acid and two lithium-ion models. The lead acid choice is between an entry level 11.5kWh battery, with 51 miles of range, or the 15.4kWh option, with 57 miles of range. Moving onto the lithium-ion vehicles, there's a 9.0kWh model with a 62-mile range, or a 14kWh version with a 101-mile range. Each vehicle features an onboard charger and takes just 4.25 hours to fill from empty (9.0kWh option).

"For decades, traditional vans such as the Ford Transit have been the go-to choice for deliveries. However, as urban areas become more developed and pedestrian-friendly, these larger vehicles are finding it increasingly difficult to navigate through towns and city centres," says Ramsy Labassi, marketing manager at Bradshaw Electric Vehicles. "As traditional vans become less practical within such zones, the demand for more agile, eco-friendly delivery solutions has surged, with organisations now actively seeking out viable alternatives which are able to navigate safely and efficiently within urban environments."

Another micro van, due to go on sale this year, is the Renault Bento quadricycle. Built alongside the Renault Duo, the Bento features a 649-litre cargo box and measures just 2.54m-long and 1.30m-wide. Its 10.3kWh battery offers a 92-mile range and can gain 15 miles in one hour from charging via a standard three-pin plug. Its enclosed cabin contains a heated driver's seat and windscreen, while USB-C ports will keep phones topped up.

Vans have been delivering parcels, transporting construction equipment and moving food around the country for years. But, as time passes, compact solutions such as those mentioned above can cut company costs and do the job quicker and more efficiently. It's not the end of the van, but it is the beginning of inner-city goods transportation.