energy saving trust

Electrifying the last mile

A guide for local authorities

Department for Transport

energysavingtrust.org.uk

Contents

1 Introduction 3

2 Scoping a sustainable last mile deliveries project 4

2.1 Catalysts for change 4

2.2 Identifying opportunities 4

2.3 Project feasibility 5

3 Ideas to encourage uptake of ecargo bikes and electric vans ... 6

3.1 Facilitate supplier changes for office deliveries 6

3.2 Support local delivery fleets 6

3.3 Lead by example 7

3.4 Enabling infrastructure: Chargepoints, logistics hubs and bike parking 8

3.5 Developing a strategy for EVs and cycle freight 8

4 Common considerations 9

5 Case studies 10

5.1 Manchester City Council 10

5.2 Leeds City Council 12

5.3 City of London 15

5.4 Team London Bridge 17

5.5 Sustrans' Cargo Bike Library 19

5.6 Cross River Partnership 21

5.7 ecofleet 24

6 Further resources 26

Cover image: Art in the Open ecargo bike, Sustrans/John Linton

1. Introduction

The “last mile” refers to the movement of goods from a local warehouse to the final delivery address, such as offices and homes.

This leg is often undertaken by diesel vans, contributing to congestion, poor air quality and climate change. The sector is experiencing growth due to increasing online shopping and demand from consumers for convenient, same-day deliveries, amongst other factors.

However, there are a growing range of alternative vehicles available, including:

- Cargo and ecargo bikes – bikes specifically designed to carry cargo and may have the addition of an electric motor
- Powered Light Vehicles (PLVs) – a wide range of light electric vehicles, also known as micro vehicles
- Electric vans – a zero tailpipe emission option for transporting larger payloads or volumes

Adopting these alternative electric vehicles and bicycles can remove tailpipe greenhouse gas emissions, improve air quality, reduce congestion and lower costs for businesses whilst creating a healthier and happier workforce.

However, there are some barriers to the uptake of these alternatives including a lack of infrastructure (such as chargepoints or cycle lanes), familiarity of businesses with these vehicle options, unfamiliar maintenance requirements, storage space for cargo bikes, and potentially, the need for wider operational changes, such as sorting procedures or routes.[1]

For electric vans, high upfront costs and insufficient range and payload remain barriers, but vehicle range and choice is improving every year.

Local authorities are well-placed to help local businesses overcome many of these barriers through schemes and incentives, thereby encouraging and facilitating local business uptake of sustainable last mile delivery vehicles. Local authorities can also lead by example by introducing these vehicles into their own or other local public sector fleets, such as NHS Trusts.

This guide sets out the variety of approaches that local authorities can take to support the electrification of last mile deliveries, addresses some common considerations, and illustrates the approaches with case studies.

For more information on the ecargo bike, PLV and electric van options available to businesses, including their prices and payloads, and challenges in operating these fleets, please see our ‘Electrifying last mile deliveries: a guide for businesses’.[2]

1 For cycle freight barriers see: Cycle Logistics Study, Element Energy for Cross River Partnership, May 2019, https://crossriverpartnership.org/?publications=element-energy-cycling-logistics-study.

2 Electrifying last mile deliveries: a guide for businesses, Energy Saving Trust, March 2020, https://energysavingtrust.org.uk/sites/default/files/EST007-01-EST%2BDFT-Electrifying%20last%20mile%20deliveries%20guide-WEB-02.pdf

2. Scoping a sustainable last mile deliveries project

By working closely with local businesses, demonstrating the potential through council fleet operations and investing in enabling infrastructure, local authorities can help to accelerate and normalise the move away from diesel vans for urban deliveries.

The first step is to explore what type of initiative could be suitable and who to target. Ideas for projects and case studies can be found in the following sections.

2.1 Identifying opportunities

Some business sectors and geographic areas are more suitable than others for the adoption of electric vehicles and ecargo bikes due to the payload and range of models currently on the market. The characteristics of an area, such as office density and the number of independent retailers, also influences the viability of third-party sustainable delivery operations.

To help target an initiative:

- **Identify potential delivery hotspots:** Review local industry, employment and retail patterns and where there are any hotspots of congestion, poor air quality and parking issues to identify where ecargo bikes or electric vans would be particularly well suited. For example, this might include areas with large offices receiving many parcel deliveries or areas with many SMEs making frequent deliveries e.g. food produce from markets. Most of this information should be available and should not require a feasibility study. Business improvement districts or local business networks may be able to assist with surveying businesses if needed.
- **Consider delivery patterns and charging infrastructure:** Identify local fleets which have vans under 3.5t and return to a depot overnight as these tend to be easier to switch to electric.
- **Review the council's delivery and vehicle needs:** Monitor the frequency, weight and distance of incoming/outbound deliveries from council buildings for a short period (e.g. two weeks). Analyse fleet telematics data to see where ecargo bikes or electric vans might fit in to the council's own operations (e.g. suitable average mileages, payload, off-street overnight parking).

See the case study on Cross River Partnership (page 21) to see how they work with London boroughs to tailor local solutions.

2.2 Catalysts for change

Clean Air Zones (CAZs) can be used in some circumstances by local authorities to discourage pre-Euro 6 diesel or pre-Euro 4 petrol vehicles from entering city centres affected by poor air quality (classes C and D include vans). CAZs are likely to lead local businesses to critically review their vehicle options and may increase localised demand for bespoke, sustainable courier services. Several cities introducing CAZs have established complementary initiatives to support fleet electrification, such as in Leeds (see page 12).

Where a CAZ is not being considered, poor air quality can still be a hook to interest councillors and local businesses in initiatives to electrify urban deliveries. The declaration of a climate emergency, Local Plan reviews, regeneration plans, updating energy, transport, traffic or economic growth strategies or a new funding opportunity are further possibilities.

Many businesses will be motivated primarily by whether switching to electric vehicles or ecargo bikes makes financial sense. See 'Why choose ecargo bikes or electric vans?' in 'Electrifying last mile deliveries: a guide for businesses'.

2.3 Project feasibility

Sustainable last mile projects vary in scale from small internal pilots to multi-million-pound schemes. Some key aspects to consider that will shape the project include:

- **Funding, resources or partnership opportunities:** Always a tough ask, but some projects include asking a neighbouring or similar authority to share their experience, involving local business or community networks, working with local vehicle dealerships or Local Enterprise Partnerships, piloting innovative technologies (R&D funding) and/or partnering with the private sector.
- **Awareness among businesses of alternative vehicle choices:** Whatever the type of project, don't underestimate the importance of a marketing campaign or events to engage businesses and change perceptions. Cargo bikes are still an unfamiliar sight, and not everyone is aware of the availability and benefits of electric vehicles.
- **The number of established ecargo bike operators or suppliers:** Where there are few existing operators, more awareness raising and incentives to encourage fleets to purchase or lease electric vans and cargo bikes will be needed. Where there are existing specialist operators, encouraging supplier switching and dedicated bike and rider schemes are more appropriate to grow, and not flood, the market.

3. Ideas to encourage uptake of ecargo bikes and electric vans

The next few pages outline various approaches local authorities could take to support the electrification of last mile deliveries, either as stand-alone initiatives or in combination.

The list has been adapted from a study on cycle logistics by Element Energy[3], MP Smarter Travel[4] resources and the Department for Transport eCargo Bike Grant Fund local authority scheme guidance (now closed).

3.1 Facilitate supplier changes for office deliveries

- **Encourage switching to ecargo bike or electric van couriers or suppliers for inbound goods:** Businesses or public sector organisations could be encouraged to start using suppliers or couriers with ecargo bikes or electric vans for their regular deliveries or servicing needs through a small subsidy or a local directory of relevant suppliers.

3.2 Support local delivery fleets

- **Engage with local businesses:** Raise awareness of zero emission delivery options through media, press, events, surveys and visits. This could be linked to another sustainable last mile initiative or Clean Air Zone activity.
- **Try before you buy scheme:** Local authority purchases ecargo bikes or electric vans, or partners with a supplier, which are then loaned to businesses to test drive or for a trial period, ranging from a week to several months. After driving the vehicles and experiencing how they could fit in operationally, businesses should be in a better position to purchase ecargo bikes or electric vans and select the best models for their requirements.
- **Longer-term leasing scheme:** Local authority leases council-owned ecargo bikes and electric vans to local businesses, potentially for six months or longer. These vehicles can be fully embedded within operations, helping to overcome upfront higher purchase costs or the barrier for market entry for start-ups.
- **Shared/pool ecargo bikes or electric vans:** Local authority purchases ecargo bikes or electric vans and makes them available on an hourly or daily basis via a booking system to local businesses.[5] This allows ad hoc use by a wide range of businesses who could not justify a vehicle purchase for their sole use or cannot securely store it, and so on.
- **Grants for businesses:** Local authority could provide funding for businesses to reduce vehicle purchase prices, on top of the support offered by the Office for Low Emission Vehicles (OLEV). This could be part of a scrappage scheme linked to a Clean Air Zone. Before introducing a scheme of this type, you would need to check if there are any state aid restrictions.

3 Element Energy, 2019. Cycle logistics study. Final report for Cross River Partnership, on behalf of the Central London Sub-Regional Transport Partnership (CLSRTP). https://crossriverpartnership.org/wp-content/uploads/2019/03/20190520_Element-Energy_Cycling-logistics-study_FINAL-REPORT-1.pdf

4 MP Smarter Travel http://www.mpsmartertravel.co.uk/

5 CoMoUK offers guidance on setting up a public bike share scheme, some of which could be applicable to an ecargo bikes scheme. See https://como.org.uk/shared-mobility/shared-bikes/how/

- **Driver and rider training:** Local authorities could offer subsidised EV, Bikeability or other specialist ecargo bike training, or produce videos or checklists to familiarise drivers with the unique features of electric vans. This could be part of a leasing scheme or a separate marketing campaign. Alternatively, local authorities could signpost to local training providers or to existing online resources where these exist, such as Energy Saving Trust's Ecodriving videos.
- **Provide preferential access:** ecargo bikes and electric vans could be given preferential access to restricted areas, such as CAZs or semi-pedestrianised zones.

3.3 Lead by example

- **Use ecargo bikes in the council's fleet:** A local authority can lease or purchase ecargo bikes for their own use. eCargo bikes are highly versatile and can be used for maintenance, street cleaning, facilities/estates, trade waste collection, events, inter-site deliveries, mail etc. As with business fleets, a pilot or trial period might be useful to better understand the practicalities of operating ecargo bikes.
- **Switch to electric vans:** Local authorities can lease or purchase electric vans to replace suitable diesel vans which are near their end of life/lease or not CAZ compliant. See Energy Saving Trust's 'Lowering van emissions and costs' guide for more information on identifying suitable vehicles to switch. Public sector organisations with larger fleets can also apply for fully funded Energy Saving Trust Fleet Support.
- **Consolidation and coordination:** Where multiple teams or departments have dedicated vans for their use, consider opportunities to share vehicles, such as through a pool vehicle booking system. If there is greater flexibility to share vehicles across the council, even just occasionally, this may allow the downsizing of larger vans, permitting a switch to electric, or use of ecargo bikes.
- **Procurement processes:** Where possible, consider changing approved suppliers and couriers to ones using ecargo bikes or electric vans, and update internal procurement policies to include a sustainability requirement for future tenders.

3.4 Enabling infrastructure: Chargepoints, logistics hubs and bike parking

- **Last mile consolidation and distribution micro-hubs:** Review the potential to rent car parking spaces so last mile operators can regularly park a large van or a large trailer and use this as a flexible micro-hub for last mile deliveries. In partnership with Dublin City Council, UPS has piloted this innovative approach.[6]
- **Identify council assets with hub potential:** Identify sites in convenient locations which could be used as hubs by last mile operators. For more information, see the case study on the City of London (see page 15).
- **Invest in public charging infrastructure:** Identify locations where commercial vehicles are frequently parked or visit during the day and investigate the potential for chargepoints. Most fleets will install private chargepoints at their depot or workplace, but not all fleets operate from a central hub, and many employees will not have access to off-street parking. For all fleets, a public charging network enables top-up charging, provides flexibility and improves confidence.
- **Update planning policies:** Use Local Plans and supplementary planning guidance to earmark and protect suitable micro-hub sites within the area and new developments, and require appropriate provision of cycle parking, chargepoints, delivery drop off/pick up points and connections to cycle lanes. Accommodating for innovative last mile solutions provides the opportunity to rethink the way kerbside and road space is currently allocated in urban areas. For more information, see the case study on the City of London (see page 15).
- **Cycle lanes:** Review current provision in the area and consider removing bollards or gates if they prevent ecargo bike access.[7]

3.5 Developing a strategy for EVs and cycle freight

Electric vans and ecargo bikes for deliveries are one component within a much wider transition to electric vehicles and active travel across the authority. Relevant wider initiatives include:

- **Developing charging infrastructure for electric vans:** This is a major project in itself[8] but the aim is to ensure commercial vehicle users have access to an affordable and convenient charging infrastructure across the city or region. This includes signposting businesses to the OLEV's Workplace Charging Scheme (or the Homecharge scheme where appropriate). Consider installing public chargepoints in locations appropriate for commercial vehicle users such as business parks, industrial estates, markets and town centres, or having a lower tariff rate or connection fee for local SME chargepoint users.
- **Local vehicle dealerships and bike shops:** To help businesses purchase or lease and maintain electric vans and ecargo bikes, consider working with local suppliers to enhance their offer. Energy Saving Trust can provide free training for dealership staff.[9] Also check whether there are any local Electric Vehicle Approved retailers.
- **Evaluation and data capture:** As with any project, it is recommended that there is monitoring of the effectiveness of the new initiatives.[10] This data may help with refining project delivery, understanding demand for charging infrastructure or assist with future funding bids.

6 See UPS Sustainability for details of the "urban Eco Hub" project in Dublin https://sustainability.ups.com/sustainability-strategy/sustainable-solutions

7 See the City of London's Transport Strategy, Proposal 24, for recommendations on cycle lanes. https://www.cityoflondon.gov.uk/assets/Services-Environment/city-of-london-transport-strategy.pdf

8 Energy Saving Trust's Local Government Support Programme offers free-of-charge support for local authorities to help with developing an EV strategy and other sustainable transport initiatives. See https://energysavingtrust.org.uk/transport/local-authorities/local-government-support-programme

9 Please email transportadvice@est.org.uk for more information.

10 See Element Energy's Cycle Logistics Study for more detail https://crossriverpartnership.org/wp-content/uploads/2019/05/20190520_Element-Energy_Cycling-logistics-study_FINAL-REPORT.pdf

4. Common considerations

To ensure that electric vans or ecargo bikes are a success for an organisation, it helps if a local authority considers the following aspects when designing a project and recruiting businesses. Some points will be more relevant than others depending on the scheme, and this is not intended to be a fully exhaustive list.

For any project which involves providing ecargo bikes or electric vans to fleets:

- Ensure that organisations **select the most appropriate vehicle or cargo bikes for their needs**. For example, this could be through providing straightforward guidance on the pros and cons of different vehicle or cargo bike options, a screening questionnaire or eligibility criteria, for example access to secure overnight storage, or analysing telematic data (see Leeds City Council case study on page 12).
- Ensure that the council (or vehicle provider) and participating organisations agree responsibilities for **servicing, maintenance and repair** of the vehicles. Identify local garages or suppliers which can safely and consistently provide these services for businesses.[11] Where there are no or few existing local providers, consider subsidising training for technicians, such as IMITechSafe.[12]
- Ensure all ecargo bike riders and EV drivers have **sufficient training** to use the vehicles safely. Many find ecargo bikes enjoyable to ride but they handle different to other bikes and riders need to understand how to manoeuvre safely in traffic. Bikeability is a recognised cycling standard and some ecargo bike specialists, such as PedalMe, have started to offer training. For electric vans, drivers should be familiar with key features, such as regenerative braking, and understand how to maximise range.[13]
- Within each participating business identify an **EV or cargo bike champion**. Where possible, a dedicated fleet manager is also an asset.
- For electric vans, encourage or require participating businesses to install private dedicated **chargepoints** where the vehicles park overnight or during any downtime during the day, and check that recharging would fit into their operations.[14] For shorter term trials, consider providing an access card or membership account for the local public chargepoint network, similar to a fuel card. Charging via a three-pin plug is very slow and not recommended.
- Check that participating businesses have **insurance** to cover electric vehicles or cargo bikes.
- For cargo bikes, ensure organisations have **appropriate, secure storage**, particularly overnight. The council or cargo bike provider may also want to provide tracking devices and locks.
- Where appropriate, ensure that any relevant staff travel, parking or expense **policies are aligned** to encourage the use of the electric vehicles or ecargo bikes, especially if they replace grey fleet (private vehicles used for business purposes).
- Switching to ecargo bikes may require **operational changes**. To ensure a reasonable chance of success, ensure that the businesses have thought about any impact on delivery timings, routes or working patterns, parking and consolidating goods. However, a trial is a great opportunity to test this in practice.

11 All Electric Vehicle Approved retailers can provide aftersales support for electric vehicles. https://www.evapproved.co.uk/

12 IMI TechSafe, https://tide.theimi.org.uk/industry-latest/motorpro/governments-office-low-emission-vehicles-backs-techsafe

13 Energy Saving Trust partially subsidises EV training for business drivers. See https://energysavingtrust.org.uk/transport/ecodriving

14 See the Energy Saving Trust van guide for more information https://energysavingtrust.org.uk/sites/default/files/23501-EST%2BDFT-Lowering%20van%20emissions%20guide-WEB.pdf

5. Case studies

Several local authorities, business improvement districts and partnership organisations are running pioneering and inspiring projects and initiatives to promote ecargo bikes and electric vans for deliveries.

Whilst most of the ecargo bike trials featured here are in London, partly due to its high density and funding from Transport for London, the principles behind the schemes could be applied elsewhere.

The eco**fleet** case study is included in this guide because it provides insight into what is required to run an ecargo bike fleet and the value of supportive initiatives for businesses to establish this market.

5.1 Manchester City Council

Manchester City Council (MCC) took part in a four-year EV and ecargo bike trial as part of the Manchester Triangulum project, funded by H2020 European Union Research & Innovation Programme.

The project funded the difference between leasing diesel and electric vehicles for MCC, meaning that EV acquisition was cost neutral for MCC.

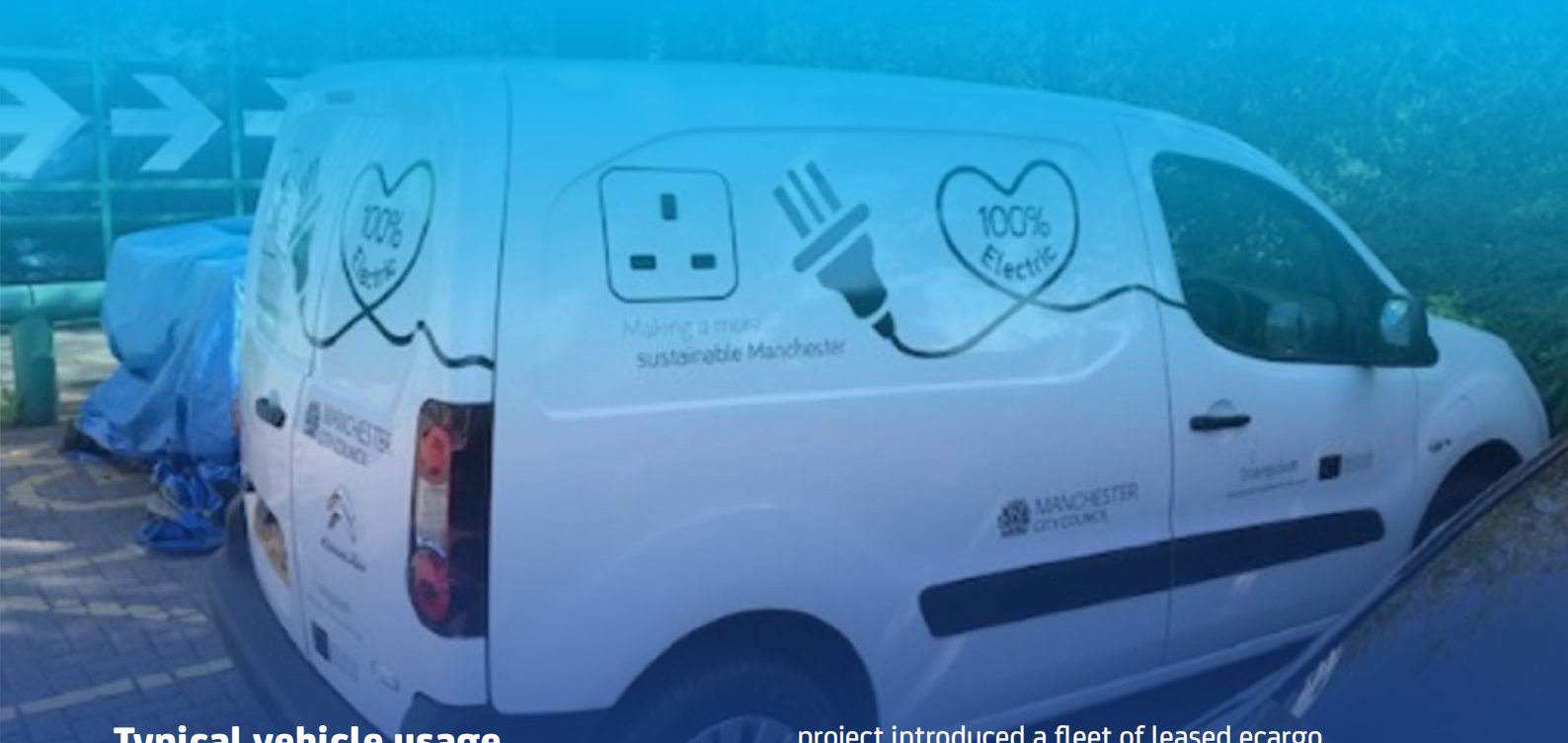
The Triangulum project, launched in 2015 and completed in January 2020, saw 20 international partners work together to demonstrate smart city solutions and carbon and energy savings across three cities, including Manchester. The council worked alongside Manchester Metropolitan University and the University of Manchester.

To promote business growth, reduce carbon emissions and improve air quality, EVs and ecargo bikes were trialled in the city.

The fleet

Total fleet 230	A mix of owned and leased mopeds, cars, small and medium vans and goods/ utility vehicles
Total EVs 17	Includes an electric buggy and older electric bikes for use by the cemetery
Total Triangulum EVs 4	Three electric vans, one electric car

The Triangulum EVs consisted of two Peugeot Partner vans, one electric Citroen Berlingo van and one Nissan Leaf car. Two replaced diesel vans (Ford Transit and Ford Connect) and two were new fleet additions.



Typical vehicle usage

Two of the electric vans were used by the Facilities team for maintenance repairs, cleaning and security, with an average of 127 miles per week. One van was used by MCC's Markets team as a shared vehicle for travel around the wholesale market site (35 acres), to Wythenshawe Market (14 miles) and the Town Hall (4 miles). The van needed to be available 24/7 to deal with emergencies, patrol the site at night and perform maintenance tasks. On average, the van travelled 12.8 miles per week. From February 2017 to September 2019, using this electric van alone, rather than a diesel van, saved 84.57kg CO_2e emissions.

The Environmental Protection team used the electric car as a shared vehicle for site visits, averaging 55 miles per week.

Powering the fleet

Charging the vans integrated easily with the council's working pattern as the vans could fully recharge in the 16 non-working hours overnight in garages or on-site.

While a three-pin (13A) supply was used, a much faster charge could be achieved using a dedicated chargepoint, which is considered best practice. MCC's electric car charged from a dedicated 7kW chargepoint connected to a solar panel which exports electricity to the grid when the vehicle isn't charging. Future charging options are under review.

Shared ecargo bikes

Prior to the trials, none of the Triangulum project participants had used ecargo bikes. The Triangulum project introduced a fleet of leased ecargo bikes available for no charge loan to a variety of organisations, including MCC. MCC found the ecargo bikes useful for work in their cemeteries and parks.

The scheme highlighted the importance of education to encourage ecargo bike uptake and the potential need to change working practices, such as different attire, contracts and facilities for staff.

Impact

Over a period of March to October 2019, MCC's Triangulum EVs reduced CO_2 emissions by 1.9 tonnes.

For more information see **www.triangulum-project.eu/**.

"The project has offered the city the opportunity to see how EVs and ecargo bikes can tackle day to day service delivery. It has eliminated issues such as range anxiety and given staff confidence driving electric vehicles. Going forward MCC is enthusiastic to convert more of the fleet to electric."

Martine Tommis, Principal Resources and Programmes Officer, MCC

5.2 Leeds City Council

Leeds City Council (LCC) offers an electric van and car 'try before you buy' scheme for organisations in West Yorkshire, with funding provided by Highways England and Defra's Clean Air Fund. Whilst this project targets frequent users of the strategic road network to improve air quality, a similar scheme could assist last mile delivery fleets.

LCC's scheme and tailored support means that organisations can be confident that switching to zero emission vehicles will be feasible and beneficial for them.

Why this approach?

Highways England were keen to find ways to help tackle the emissions from diesel vans, which is a rapidly expanding part of fleets and one for which zero emission alternatives are becoming increasingly available.

In a survey undertaken by Energy Saving Trust for Highways England in 2017/18, 78% of fleet managers said a 'try before you buy' scheme would influence their decision to purchase EVs. A Highways England pilot demonstrator project with five fleets highlighted the value of embedding electric vans into operations for several weeks or months as it enabled managers and drivers to assess their viability of the vehicles in a low-risk way.

Although the planned Leeds Clean Air Zone (launch postponed in March 2020 due to coronavirus) will not charge any vans entering the zone, the 'try before you buy scheme' is a complementary incentive to encourage and enable businesses to switch to zero emission vehicles.

Scheme details

Organisations can trial electric vans and private hire vehicles for two months free of charge. The scheme launched in January 2020 and will run initially until October 2021.

49 vehicles were available for loan at launch, with models including the Renault Kangoo ZE maxi van, Nissan e-NV200 van and Nissan Leaf car (for private hire and taxi vehicles). The vehicles will be incorporated into the council's fleet at the end of the project. The fleet will be expanded in 2020 to a total of 70 vehicles, expanding the range of makes and models on offer.

Highways England has invested £2 million into the project with a further £900,000 provided by LCC through the UK government's Clean Air Zones Early Measures Grant. The funding covers the purchase of vehicles and chargepoints as well as promoting and managing the scheme.

Organisations wanting to trial vehicles can be from the public, private or third sector, but need to be based in Leeds (for private hire vehicles) or West Yorkshire (for vans) and operate at least one petrol or diesel vehicle.

Organisations trialling vehicles also receive one-on-one impartial advice to help them make an informed purchase decision.

The process

1. Organisation registers their interest online.
2. A fleet review is conducted. Telematics data, such as on journey lengths and daily mileage, is gathered from their current vehicles for one month.
3. The initial evaluation report from the telematics data indicates whether electric vehicles (EVs) could be a suitable alternative. Where EVs are not suitable, advice will still be given on the organisation's current transport use.
4. One or more EVs are loaned from LCC to the organisation for a trial of up to two months. Telematics data is again captured.
5. The final report will conclude whether electric vehicles are right for that organisation and will quantify the cost savings and environmental benefits of switching to electric.

Result

There have been approximately 350 expressions of interest in trialling vans from organisations and over 150 from private hire drivers. Interest has come from a wide range of organisations, mainly commercial businesses but with substantial interest from third and public sector bodies. The majority are small businesses with fewer than 20 employees but there has been strong interest from organisations of all sizes, including large organisations of 250+ employees with fleets of over 100 vehicles.

For more information see **www.leeds.gov.uk/business/support-and-advice/trial-electric-vehicles-at-your-organisation/trial-an-electric-taxi-or-van.**

Although the trials were put on hold from March 2020 due to the COVID-19 pandemic they will resume as soon as is feasible.

"We are excited to be supporting Leeds City Council with its plans to encourage more businesses to try out electric vehicles. These trials allow organisations to see how it can be viable and cost effective for their specific operations, and at the same time to do their bit to help improve air quality."

Ivan Le Fevre, Highways England's Head of Environment

5.3 City of London

The City of London Corporation is leading the way with their vision to mitigate the impact of freight and servicing activity in the Square Mile.[15]

Minimising the impact of servicing and delivery needs

The City of London is a unique area with a particularly intense freight challenge. It has a large working population which generates significant demand for goods, services and freight movement. During the morning peak, freight and servicing vehicles account for 32% of motorised traffic, or 25% averaged over the day, conflicting with the busiest times for walking and cycling.

There are 535,000 people employed in the City and this figure is expected to grow to almost 600,000 in 2036. Therefore, ensuring freight needs are met more efficiently and sustainably is increasingly important. The City Corporation aim to reduce the number of motorised freight vehicles in the Square Mile by 15% by 2030 and 30% by 2044.

Micro-distribution hubs

After discussions with hauliers, couriers and City businesses, the City Corporation identified that the lack of infrastructure for last mile distribution is the biggest barrier to clean and efficient last mile deliveries. The aim is to unlock this potential in a way that is sustainable in the long-term without subsidy.

A review of City Corporation assets identified three underutilised sites (such as car parks or loading bays) which could be released for micro-logistic operations. These sites will be leased at market rates to freight and logistics operators.

Interested operators will be able to bid to lease the hub sites and scored based on price, volume of goods delivered, and the proportion of volume delivered by non-motorised means. This is likely to favour operators using ecargo bikes and other sustainable delivery methods, such as pedestrian porters.

Operators can opt to retrofit the site themselves or for the City Corporation to retrofit, which will be accounted for in the terms of the lease. The hub operators are expected to provide data to the City Corporation on the number of diesel vans displaced from City and City fringe operations.

Identifying and securing sites

Locating suitable sites was a joint effort between the transport, parking and housing teams and the City Surveyors. As demand outstrips supply of suitable sites, it is important to be opportunistic and move quickly when new opportunities are identified.

To be suitable, sites needed to be within the local authority's influence, such as a now underutilised car park (private car use is falling) or over-specified underground loading facility; have access for larger vehicles (7-12t HGVs); is in a strategic or high-density location; and have electric capacity for charging ecargo bikes and possibly a small number of EVs.

15 City of London, 2019. City Streets, Transport for a changing Square Mile. City of London Transport Strategy, see Proposal 38. https://www.cityoflondon.gov.uk/assets/Services-Environment/city-of-london-transport-strategy.pdf

The City Corporation has used their statutory planning policies to give them a policy basis to covert these sites for logistics use. Although now resolved through a legal agreement, difficulties which were encountered as alternative uses, such as housing or commercial office space, could attract a higher commercial income. At one stage, they considered procuring a sustainable last mile delivery service for the City, rather than just leasing the sites. However, this would have been more complex to implement and worked against the commercial interests of the operators.

Where no council assets are available, using local business networks to talk to estate managers can prove useful in identifying other potential sites.

Changing planning policies

In parallel to reviewing their own assets, the City Corporation has updated their Local Plan to prioritise sites across the City for logistics use which may otherwise be converted for other purposes. In effect, the City now has a statutory basis to refuse planning applications from developers; a pioneering approach.

Through its Local Plan, the City also requires all new major developments to have a detailed Delivery and Servicing Plan in order to gain planning permission. The Freight and Servicing Supplementary Planning Document[16] offers guidance on suitable actions. These plans are thoroughly reviewed and obligations (passed on to building occupiers) are monitored and enforced.

Top tip

"As managing freight often falls between the cracks between planning and transport teams, and cabinet member or committee responsibilities, we advise you make sure you have identified the right internal teams and decision-making processes early on. Otherwise, you risk wasting time and energy as well as losing momentum on delivering the hubs."

Thomas Parker, Senior Strategic Transportation Officer, City of London

For more information, please email **Strategic.transportation@cityoflondon.gov.uk**

16 Freight and Servicing Supplementary Planning Document, City of London, Feb 2018. Due to be reviewed in 2020.

5.4 Team London Bridge

Business improvement district Team London Bridge set up the 'Bikes for Business' campaign in October 2018, supported by Transport for London's Healthy Streets for Business Fund.

Encouraging switching to ecargo bike suppliers

After market research into local business needs and the ecargo bike services available, Team London Bridge created a supplier directory to raise the visibility of suppliers using ecargo bikes that could meet the needs of local businesses. Team London Bridge provide subsidies to businesses to encourage the supplier switch or purchase of ecargo bikes.

Overcoming perceptions

At the start of the project, awareness of ecargo bikes was low among businesses and in some cases, negatively associated with fast food delivery services. To overcome this, a public expo was held for 20 ecargo bike operators to meet with businesses and showcase their services. Professional photography also captured what the streets could look like full of ecargo bikes.

It was clear that businesses wanted a professional, safe service so every ecargo bike courier on the supplier directory must sign a Code of Conduct.

Cargo bikes staged on London Bridge to illustrate the vision.

Businesses submit reviews of the ecargo bike operators to ensure quality services are being recommended through the directory.

To further raise the profile of ecargo bikes, Team London Bridge's Christmas campaign in 2019 delivered over 2,000 donated gifts to charities using ecargo bikes and an 'Open Kitchen' event set up a restaurant using ecargo bikes. Team London Bridge has also purchased a cargo bike to support local gardeners to undertake landscape maintenance across the London Bridge area, and various other jobs that otherwise might require a van or taxi.

Procurement contracts

Team London Bridge found that long-term procurement contracts were a barrier for businesses switching to suppliers with ecargo bikes. Some businesses were happy with their current courier and did not want to disrupt the relationship. Team London Bridge encourage that when re-tendering, a preference or requirement for ecargo bikes is included. Businesses have found ecargo bike suppliers to be competitive on price. As a result, some operators, such as Santis Global and City Sprint, have started to provide a 'default to cargo bike' option on their website.

Impact

- 50 businesses have trialled using ecargo bike services from March 2019 to March 2020
- Estimated that 318 deliveries per week are being converted to cargo bike
- An increase in the number of cargo bikes by 125% in one location and by 467% in another location after one year of the project

For more information see **www.teamlondonbridge.co.uk/bikesforbusiness**

Cargo bikes staged on London Bridge to illustrate the vision.

Credit: Sustrans/Malcom Cochrane.

5.5 Sustrans' Cargo Bike Library

Buying an electric cargo bike is a significant investment, particularly for smaller organisations. Sustrans, the charity making it easier for people to walk and cycle, supports organisations to see if cargo bikes are right for them through the Cargo Bike Library.

Free ecargo bike trials

The Cargo Bike Library launched in June 2018 and is funded by Transport Scotland. It allows any small business, public sector organisation or community group in Edinburgh to borrow an ecargo bike free of charge. The Cargo Bike Library has a fleet of 15 bikes including two-wheelers, trikes, trailers and large logistic vehicles. The bikes can carry weights ranging from 80 kg to 250 kg and have been specifically chosen to suit Edinburgh's unique topography. For instance, the electric assist can power the bikes up hills while the wide tyres make riding on cobbles and tram tracks safer and smoother.

More than borrowing a bike

The Cargo Bike Library provides tailored information and advice to help organisations decide whether ecargo bikes could meet their service and delivery needs. It offers flexible borrowing options, route planning and the opportunity to temporarily brand the bikes to promote the organisation.

Sustrans recognises that bespoke ecargo bike training is critical to help riders feel comfortable and competent in traffic and is essential to encouraging uptake. This service is provided free of charge to the organisation's workforce.

Working with local authorities: trams to Newhaven

The Cargo Bike Library is collaborating with the City of Edinburgh Council as it undertakes the tram extension to Newhaven.

As part of the business support package, Sustrans is supplying cargo bikes, training and consultation to assist in the establishment of logistic hubs. The ecargo bikes will move goods to local businesses while there is no road access for motorised delivery vehicles. This use of cargo bikes during road closures is the first of its kind in the UK.

Working with organisations

National Galleries of Scotland borrowed an ecargo bike to deliver its Art in the Open sessions, as part of the Celebrating Scotland's Art programme. The bike was used to move equipment for creative activities held in Edinburgh parks. They are now buying their own bike, collaborating with graphic design students from Edinburgh College to design a bespoke box to carry their arts supplies.

Results

Since 2018, the Cargo Bike Library has engaged with over 30 businesses, trained 130 riders and the fleet has ridden over 4,000 kilometres. Initial findings show that one in five businesses have bought a bike and 75% adopted cargo bikes into their delivery model in some way.[17]

Sustrans have shown that 'try before you buy' schemes, along with supporting advice, can be hugely beneficial for smaller organisations to feel confident in their investment in ecargo bikes.

For more information see **www.sustrans.org.uk/thebikelibrary** or email **cargobikelibrary@sustrans.org.uk**

"The cargo bike has become integral to Art in the Open. We can easily reach lots of places without thinking about vehicle access. We also love that people can spot us as we ride about."

Education Officer, Mara Barth

17 Sustrans, Research and Monitoring Unit, Cargo Bike Library Monitoring Report 2018/19 (Internal Document).

5.6 Cross River Partnership

Following a successful first year of the Clean Air Villages project, non-profit organisation Cross River Partnership (CRP) secured a further round of funding from the Defra Air Quality Grant to extend the project for a following year as Clean Air Villages 2 in 2019/20. CRP is a public-private partnership that delivers projects which make London a nicer place to live, work or visit.

Working with seven London Boroughs and two private partners, Cross River Partnership identified 13 'villages' across London with high footfall and high levels of pollution caused by localised levels of congestion. Recognising local characteristics, each village requires a different solution to tackling the impact of businesses' deliveries and servicing which has contributed to a rise in local air pollution.

Collaborating with London Boroughs

CRP is delivering the work with the London Borough of Lewisham as the lead authority and in partnership with the London Boroughs of Camden, Hammersmith and Fulham, Lambeth, Wandsworth, the Royal Borough of Kensington and Chelsea and Westminster City Council, Cadogan Estates (landowners), and Euston Town BID.

CRP engages with project partners to understand the needs of each village and the focus that the borough would like to take to reduce air pollution. All project partners attend quarterly steering group meetings to check the progress in each village and to engage in cross-borough sharing and learning opportunities. The project partners play a key knowledge role in connecting CRP with local contacts and resources.

The Clean Air Villages project is highly collaborative, with a diverse range of stakeholders.

Designing solutions

Detailed survey work and air quality workshops were undertaken by CRP during the first phase of the project to decide what solutions would work for each area. Tailored solutions vary from cargo bike schemes, to shared electric vehicle schemes, to consolidation of deliveries.

In the case of cargo bike schemes, businesses were asked how they might use a bike or service, what goods they would move or deliver, and whether they would want a bike and rider, or just a bike, for example. Obtaining a detailed understanding of businesses' needs enabled CRP to design tailored cargo bike schemes that were relevant to the mix of businesses in the local areas. Running the schemes enabled CRP to calculate the true cost for a business to use such a transport mode in the long term.

Shared electric van in Brixton.

Shared electric van

Results from the survey and engagement work in the Brixton 'village' led to a solution involving a shared electric van. In collaboration with the London Borough of Lambeth, Zipcar, and Brixton BID, the scheme launched in December 2019.

Significant challenges were faced in:

- securing capital funding from the council
- adapting for delays in Traffic Management Order processes for changing the allocated bay for the vehicle
- accepting a lengthy lead time from the vehicle manufacturer, due to supply issues at the time
- for Zipcar in adapting its operations for an electric van, the first electric van in their fleet.

There has been a steady flow of businesses registering to use the free electric van. The aim is to encourage behaviour change around the use of shared vehicle schemes and to promote the use of zero tailpipe emission vehicles. This is timely for Brixton businesses who will be affected by the ULEZ zone expansion, scheduled to take place in October 2021.

Lessons learnt

- Promote and explain the concept of cargo bikes by undertaking business engagement. This will dispel any myths of volume and capacity whilst presenting businesses the opportunity to ask questions to cargo bike companies/ riders. Having a physical cargo bike can be a great conversation starter.
- Having something tangible to offer businesses, such as a shared electric van, makes for more engaged discussions about sustainable last mile operations.

- Lead by example and look for ways to use sustainable vehicles in the local authority fleet, such as in deliveries between libraries.
- Solutions do not need to be high cost. Whilst CRP created a free-to-use interactive Supplier Directory, which lists businesses that deliver using zero and low emission modes of transport, a simple list of suppliers would also help businesses switch.
- Consider what regulations cargo bike riders will need to meet when promoting schemes or suppliers.
- If the borough operates a hire scheme or similar, they will need to find space to store cargo bikes securely.

Results

For the three months since the Brixton Van was launched, it has been used to travel 2,000 miles, saving 1.1 tonnes of CO_2 compared to a diesel van.

CRP successfully received a further Defra AQ grant, in order to deliver a Clean Air Villages 3 project in 2020/21. The project will expand into new Air Quality Focus Areas and will build on the knowledge and experience gained from the first two phases of the project.

For more info, please see **crossriverpartnership.org/projects/clean-air-villages-2/** and the case studies from Clean Air Villages 1**.**

ecofleet ecargo bike in Tooting, as part of the Clean Air Villages project.

5.7 ecofleet

London-based start-up ecofleet mindful **delivery** was founded to provide efficient delivery services that beat the traffic, reduced pollution and cut the number of cars and vans on the road. Ecofleet can make 100-200 deliveries a day in London using ecargo bikes, compared to 12 deliveries a day by van.

20 ecargo bikes

11 riders

Up to 12 deliveries an hour

12,600

ecargo bike miles between December 2019 and March 2020, saving five tonnes CO_2 compared to a diesel van

The fleet

As of March 2020, ecofleet have 20 large ecargo bikes with seven full-time riders and four part-time riders, and rent one electric van. The two-wheeled ecargo bike is ecofleet's vehicle of choice as the bikes can easily bypass traffic, are more stable than trikes and more agile than trailers.

Typically, the ecargo bikes pick up goods such as wine, cheese, gift baskets and subscription boxes from clients and deliver them to their client's customers in multi-drop deliveries. Ecofleet also offer white-label (client branded) delivery services and same-day delivery, which is popular with plumbers and builders for delivering building supplies and spare parts quickly.

The front-loading ecargo bikes have a load capacity of 623 litres and a payload of 120 kg – the equivalent of 102 bottles of wine. The bikes can be powered for 60 miles on one battery charge and each bike carries a spare bike battery and spare phone battery as phones are used for navigation.

Rider training

Ecofleet understand the importance of on-boarding riders properly. All their riders have Bikeability Level 3 cycle training, paid for by ecofleet. New riders then shadow another rider for one week to understand every client's collection system and build a relationship.

Overcoming obstacles

One challenge ecofleet has overcome is finding a robust and flexible IT platform that can optimise delivery routes and provide transparency for clients and their customers. After finding trackers too slow and encountering various user experience and user interface issues, ecofleet have invested in Onfleet, a software tailored for ecargo bikes. Onfleet integrates into client's systems for easy upload of delivery addresses. Riders and customers can receive messages en route via an app, get estimated arrival times and provide tracked deliveries using their phone's GPS.

Another lesson eco**fleet** has learnt is that they need more members of staff than they thought to cover sickness and leave, which is difficult to foresee and has cost implications.

Eco**fleet** have also found that there are not many insurance providers for ecargo bikes, a market opportunity that would support the growth of this sector.

Working in partnership

In February 2020, eco**fleet** won the bid and launched a ten week ecargo bike delivery service trial with London non-profit organisation Cross River Partnership (see case study on page 21) in Tooting, an area with poor air quality. Businesses in Tooting Market will be able to use the ecargo bikes for 10 hours a week, some using them to deliver between stores and others using the eco**fleet** hub to consolidate deliveries. Over two months, the ecargo bikes covered 195 miles and saved 63kg of CO_2 compared to a diesel car.

Eco**fleet** has also won the bid for another ten week trial to service Deptford, Lewisham, as they were the local business with a hub to consolidate deliveries.

Advice for local authorities

"The government has done an incredible job of building a great cycle lane infrastructure in London. It would be a shame not to use them and benefit from a speedy and efficient delivery. Using bikes as a means of delivery and transport is a behavioural change which we can encourage people to adopt."

Farah Asemi, Founder and CEO of eco**fleet**

For more information, see **https://theecofleet.com**

6. Further resources

City Changer Cargo Bikes project, 2019. Various resources are available from: http://cyclelogistics.eu/index.php/downloads/source-material

Cycle Logistics Study, Element Energy for Cross River Partnership, May 2019, https://crossriverpartnership.org/?publications=element-energy-cycling-logistics-study

Cycle Freight Study, Element Energy for Transport for London, March 2018, http://content.tfl.gov.uk/cycle-freight-study.pdf

Electrifying last mile deliveries: a guide for businesses, Energy Saving Trust, March 2020, https://energysavingtrust.org.uk/sites/default/files/EST007-01-EST%2BDFT-Electrifying%20last%20mile%20deliveries%20guide-WEB-02.pdf

Government Response to Call for Evidence: The Last Mile – delivering goods more sustainably. UK Government, March 2019 https://www.gov.uk/government/consultations/the-last-mile-a-call-for-evidence

Lower van emissions and costs, Energy Saving Trust, May 2019 https://energysavingtrust.org.uk/sites/default/files/23501-EST%2BDFT-Lowering%20van%20emissions%20guide-WEB.pdf

The Potential of Light Electric Vehicles for Specific Freight Flows: Insights from the Netherlands, 2018 www.citylogistics.info/research/city-logistics-light-and-electric/

The Route to Tomorrow's Journeys, L-category vehicles, Motorcycle Industry Association, 2019 https://mcia.co.uk/en/the-route

Triangulum Project, testing sustainable mobility innovations, https://www.triangulum-project.eu/

Energy Saving Trust is an independent organisation dedicated to promoting energy efficiency, low carbon transport and sustainable energy use. We aim to address the climate emergency and deliver the wider benefits of clean energy as we transition to net zero.

We empower householders to make better choices, deliver transformative programmes for governments and support businesses with strategy, research and assurance – enabling everyone to play their part in building a sustainable future.

energysavingtrust.org.uk

Energy Saving Trust
30 North Colonnade
Canary Wharf
E14 5GP
Phone: 020 7222 0101

EST0011