Fleet Charging Guide 2023

BVRLA
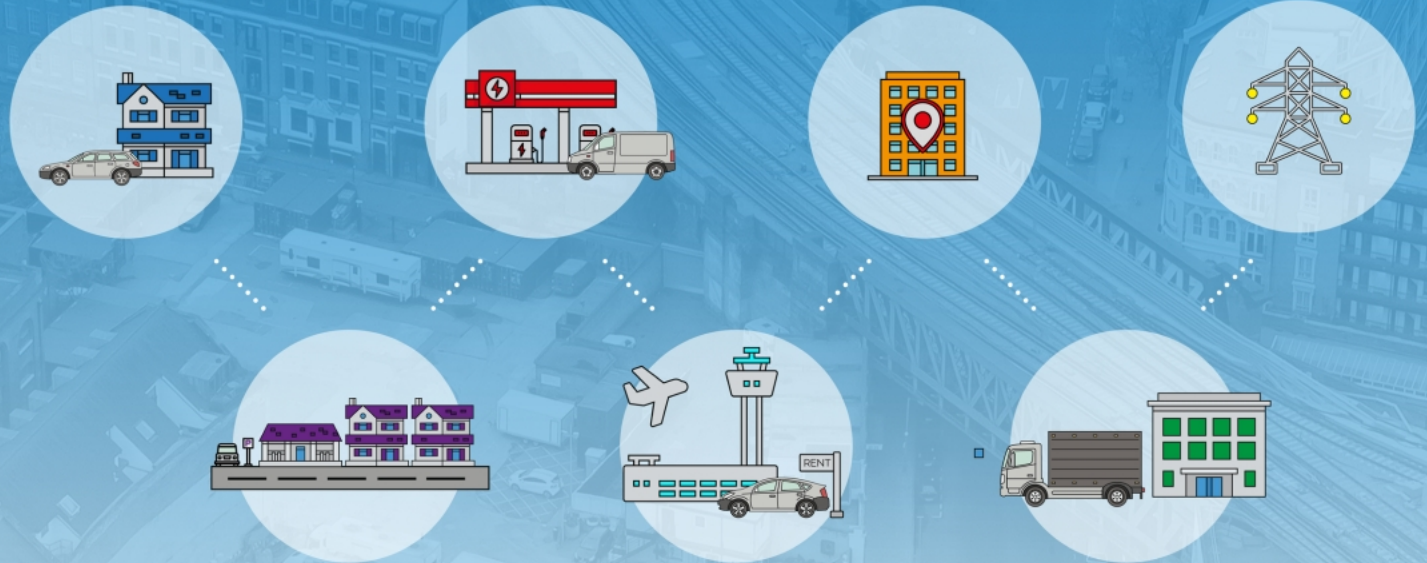
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About the BVRLA

Established in 1967, the British Vehicle Rental and Leasing Association (BVRLA) is the UK trade body for companies engaged in vehicle rental, leasing and fleet management. BVRLA members are responsible for a combined fleet of four million cars, vans and trucks on UK roads, accounting for one-in-ten cars, one-in-five vans and one-in-five trucks. The vehicle rental and leasing industry supports almost 500,000 jobs, adds £7.6 billion in tax revenues, and contributes £49 billion to the UK economy each year.

On behalf of its 1,000+ members, the BVRLA works with policymakers, public sector agencies, regulators, and other key stakeholders to ensure that road transport delivers environmental, social and economic benefits to everyone. BVRLA members are leading the charge to decarbonise road transport and are set to register 400,000 new battery electric cars and vans per year by 2025.

BVRLA membership provides customers with the reassurance that the company they are dealing with adheres to the highest standards of professionalism and fairness.

The association achieves this by maintaining industry standards and regulatory compliance via its mandatory Codes of Conduct, inspection and governance programme and government-approved Alternative Dispute Resolution service. To support this work, the BVRLA promotes best practice through its extensive range of training, events, and information-sharing activities.

About this Report

The fleet industry is the lifeblood feeding the vital organs of the UK economy and society. It is the trucks taking parts to our factories and stock to our supermarkets; the vans delivering parcels to our SMEs and plumbers to our houses; the cars delivering key workers to their place of work and holidaymakers to their destinations.

These fleets - BVRLA members and their customers - are leading the transition to zero emission road transport. They operate in every town, city and region of the UK and many of them will convert all their vehicles to electric well ahead of the 2030 phase out target for banning the sale of new diesel or petrol cars and vans.

Access to fast, affordable, reliable, accessible and secure charging infrastructure is the biggest concern that organisations and drivers face when planning for their electric future. Fleets operate a wide range of vehicles in a wide variety of ways and there is no one-size-fits-all charging solution.

Getting the right infrastructure in the right place at the right time will require close collaboration between everyone in the electric vehicle ecosystem, including drivers, fleet operators, charge point operators (CPOs), distribution network operators (DNOs), local authorities (LAs) and national government.

To facilitate this process, the BVRLA's Fleet Charging Guide provides a high-level overview of how and where fleets charge and makes recommendations on where the collaboration should focus.

Methodology

Global Counsel was commissioned to research and write this guide on behalf of the BVRLA. It builds on the BVRLA's existing work to assess progress towards zero emission fleets through its Road to Zero Report Card, but specifically addresses the pressing challenge of ensuring that electric vehicle (EV) charging infrastructure supports the requirements of fleets as we transition.

The guide is the product of extensive interviews with the BVRLA's members and their customers, through which we have sought to understand the way vehicles are currently used, their journey profiles, and their existing and future challenges with charging infrastructure. The interview process inevitably did not cover all private and public fleets. For example, blue light vehicles were not included.

In 2023 the Fleet Charging Guide was updated to include HGVs. HGVs now have set decarbonisation dates and, while it is early days, their charging needs will increasingly be a focus for fleets. The Guide has also been updated to include deep dives into grid upgrades and the charging needs of rental operators including at airports. Getting grid upgrades and airports right is essential to unlocking a significant level of fleet decarbonisation.

Recommendations

Matching types of provision to emerging gaps in infrastructure

1. LAs should consider how they include the fleet sector's needs in their EV infrastructure strategies. Charging demand from fleet users living and/or working in the community is critical for infrastructure planning. LAs should engage with fleets to understand their requirements

2. OZEV should provide guidance to LAs and CPOs on the practical measures needed to ensure that fleet users are catered for. Fleet concerns around accessibility, size of bays and ease of use need addressing. Government is well placed to coordinate and share best practice among LAs and CPOs.

Building trust

3. OZEV should pre-emptively set out how it intends to enforce its new reliability standards. This would incentivise early action by CPOs and inspire confidence in fleets. It could include publishing the specific standards and repair times that are required under the 99% reliability metric.

4. OZEV should ensure open data can be used to demonstrate the accessibility of chargepoints, facilitate virtual queuing and the booking of slots. This will support fleet use cases with limited downtime to quickly identify available and accessible chargepoints.

Ensuring consistent ease of access

5. LAs should incorporate accessible charging standards into their procurement frameworks. Chargepoints delivered by LAs need to align with standards for disabled users. Where appropriate, they also need to be accessible for e-van users who work and/or live in the community.

6. Government should create incentives for CPOs to introduce roaming solutions ahead of the regulatory deadline. The legal deadline for CPOs to develop roaming solutions will not come into force for over two years and fleets are still reporting complex reimbursement requirements.

A holistic approach

7. LAs should work with DNOs, CPOs, fleets, regional transport boards and other stakeholders to promote regular engagement and sharing of data. This will create a clear picture of the charging network and its rollout across the region. Fleets and infrastructure investment are a key part of this picture.

8. LAs should endeavour to establish a 'whole organisation' view of charging requirements across their region. This should ensure that sometimes disparate decisions about 'active travel' vs electrification of fleet all drive towards the same set of objectives.

Overcoming grid connection challenges

9. The Energy Networks Association (ENA) should support DNOs to adopt a standardised process and timings for all stages of grid connections and upgrades. This is needed to alleviate the challenges fleets face when interacting with DNOs, whether they are seeking information on supply or commissioning work.

10. The ENA should encourage DNOs to provide a common, easily accessible, mechanism for establishing all elements of capacity at a site. This mechanism should only require basic information about a site and provide capacity information in a timely manner.

11. Where upgrades are needed, the ENA should work with DNOs to promote common forms and inputs that are accessible in advance. This would save time and reduce the number of mistakes made during grid connection applications.

12. Ofgem should review DNO Guaranteed Standards of Performance (GSoPs) to incorporate existing connections and create required response times at each stage of the grid connection process. This would allow businesses to know when to expect information on the cost and process for installing power and to seek alternatives where upgrades are too costly or too complex.

13. Ofgem should encourage DNOs to consider where upgrades by businesses in similar locations could be coordinated to reduce costs and delays. Currently only the DNOs have visibility of businesses going through the same grid upgrade process at the same time and locations.

14. LAs should establish a process for sharing charging infrastructure among fleet operators. Currently the sharing of infrastructure is reliant on businesses coming together organically; LAs could enable such arrangements by matching expressions of interest from businesses who are willing to share their infrastructure and those from fleet users who are looking to utilise others' infrastructure.

Airport infrastructure

15. DfT and other relevant stakeholders should work with airports to ensure that rental operator needs are reflected in decarbonisation plans. Currently, airports are not engaging with rental operators as standard in the development of decarbonisation strategies. Government and other stakeholders need to consider rental operators as a key partner in airport decarbonisation.

16. Airports should work with rental operators to embed an appropriate process for EV charging infrastructure planning. Through enhanced engagement, airports can develop a credible route to decarbonising a key transport provider. Having a single point of contact, transparency on capacity challenges and clarity on roles and responsibilities for charging infrastructure is necessary to unlock airport rental BEV uptake.

17. The Civil Aviation Association (CAA) should mandate that airports provide information to rental operators on power constraints at their locations and the airport's planned grid upgrades. If this information was supplied, it would enable rental operators to plan charging infrastructure and engage with the airports to ensure their capacity needs are met.

18. OZEV should work with airports, DNOs, CPOs and fleets to understand their power requirements and possible support needed. To ensure that suitable charging infrastructure is delivered and power capacity is not a barrier, OZEV needs to bring together all relevant stakeholders to consider likely requirements of fleets, the process for grid upgrades and responsibility for costs.

Introduction

> **The next five years are critical in the transition of companies as they move from only using EVs where convenient, to EVs making up a majority of the vehicle fleet.**

Meeting the policy ambition

The government's decision to legislate for the 2030 phase out of internal combustion engine (ICE) vehicles has created a clear deadline for individuals, companies, and vehicle manufacturers to transition to electric.

The BVRLA's Plug-in Pledge demonstrates the scale of commitment across fleet; by 2025, the vehicle rental, leasing and fleet industry will be registering 400,000 battery electric cars and vans each year. This fleet transition will not only facilitate the decarbonisation of transport, but also vastly impact customer choice, with many leased, rented, or car club journeys now being electric. It will also expand the number of affordable EVs in the used market as fleets cycle through vehicles at a more regular rate than other vehicle users.

The steps taken on charging infrastructure between now and 2025 will determine whether this transition kicks into gear or stalls

along the way. So far, prompted by changes to Benefit-in-Kind tax rates, EV uptake has been led by company cars and the growth in salary sacrifice schemes where drivers can charge at home or work. Many commercial fleets have also started making the switch. As new technology continues to develop, this trend is set to continue at pace with fleets leading the way. It is essential that the provision of reliable infrastructure keeps in lockstep with increasing and changing EV usage.

Shared challenges

There will clearly need to be a seismic scale up in the delivery of infrastructure to support the transition, from just 37,000 charge points today to an infrastructure that supports the 14 million electric cars and vans on the road by 2030. This is not a task for policymakers alone - it requires extensive cooperation with private sector charge point operators (CPOs), energy companies, fleet operators, and the automotive companies themselves.

The opportunities and challenges - economic, social, and environmental - are shared between these players, and public expectation weighs on them all.

The BVRLA is clear that fleets can play a key role in this by building an understanding of what charging is required across different vehicle use cases.

LAs already face a daunting challenge in engaging with all road users about their public charging needs. The BVRLA's 1000 members account for nearly four million vehicles on the road, and the diversity of different members enables a crucial window into the future needs and requirements of all road users.

Building this initial understanding of the different needs corresponding to different use cases will enable LAs and national government to focus on a narrower set of actions. These include coordinating delivery between key stakeholders, identifying gaps that the private sector will not fill, and setting clear standards that ensure appropriate provision in charge points that are suitable for all users.

Creating a just transition

The key risk for policymakers in this process is that the available charging infrastructure means that only some vehicle users can transition, with others left behind. This is particularly pertinent to fleets, where charging infrastructure is not only supporting the decarbonisation of their vehicles but also implicitly enabling fleets to carry out essential services that businesses or consumers rely on.

In the absence of the right kind of charging provision, there is a clear risk to the services fleets provide to both businesses and households, their anticipated routes, and their journey times. There is also the risk that a perception grows that electrification is only catering towards a specific few; namely, those able to charge at home or who can afford (both in terms of time and cost) to change their mode of travel. The fallout from this will not be restricted just to fleets and drivers themselves, but also to public consent for the transition and net zero agenda more broadly.

Infrastructure informed by need

This guide focuses on how the delivery of charging infrastructure can be constructed in response to the genuine needs of fleets. It sets out how drivers expect to interact with different types of charging infrastructure as they transition to an EV.

The guide provides specific recommendations for how the local and national framework can best support the needs of the various users identified. To reflect that provision will not be delivered through a single solution, these are organised under six broad principles: minimising gaps; building reliability; ensuring accessibility; taking a holistic approach; overcoming grid challenges; and delivering airport infrastructure.

Section one addresses how we build momentum as LAs increasingly take responsibility for the planning and provision of charging infrastructure. Section two explores how the profiles of different users can be used to identify areas of existing and future requirements. This includes deep dives into grid upgrades and the charging needs of rental operators including at airports as well as the emerging challenges surrounding HGVs. Finally, section three outlines how these same profiles can show how to support the most challenging vehicles to transition.

Section 1: Building Momentum

Charging infrastructure remains one of the most significant barriers to uptake of EVs across fleet. Although measures to address this are underway, with the public charging network more than tripling in size since 2018, the private sector is focusing on installing infrastructure with the best commercial cases and profitability. Building momentum across the full range of possible charging uses will be key to guaranteeing the transition.

The role of LAs

LAs have a critical role to play in the EV transition. The BVRLA conducted research in Q4 2022 that found around 68% of upper-tier LAs have an EV infrastructure strategy or are currently working on one. This is an encouraging figure given it is in advance of the statutory obligations that are expected to come forward in the Transport Bill.

The roll-out of the previous On-Street Residential Charging Scheme (OSRC) and the more recent Local Electric Vehicle Infrastructure (LEVI) pilot project have given LAs a route to access national funds to support local EV infrastructure provision.

The BVRLA is keen to build its engagement with LAs to ensure they are thinking about

fleets as part of their planning. This guide is a cornerstone of that engagement, offering practical insight to LAs from the fleet sector. Without this, there is risk of a widening provision gap for some vehicle uses and types, in terms of access to the type of charging they need, the reliability of the charge points, and the design of this infrastructure to suit all vehicles.

LAs are well-positioned to play a supporting role in monitoring and addressing these provision gaps (either through the distribution of funds or through collaboration with the private sector) and

> "People who have taken EVs to date have had access to home charging"
> Fleet director, vehicle leasing company

ensuring that fleets are not left behind in the transition.

Emphasis on a broader set of charging types

To support this new role, we now need to move beyond a focus on overnight residential solutions and look at coordinating a roll-out that supports charging needs along the entire profile of driver journeys. A 2022 survey of EV users found that 90% of current EV drivers use public networks at least occasionally.

Greater LA involvement in charging infrastructure planning and provision provides an important opportunity to consider this wider set of uses. For example, for vehicles that are in use all day, there is rarely the time available for drivers to sit on a slow charge point for the length of time needed for a full charge. This particularly applies to fleets like delivery drivers, or car club rentals with short dwell times and rapid turnarounds between hires. However, almost all fleets spoken to cited time pressure as a particular concern when considering their charging needs

Types of Charging

Below we have considered the broad **types of charging** that will need to be facilitated to meet the needs of different users:

	### Rapid Charging This refers to charging using a 50kWh (or higher powered) charger. This would typically be used where a driver/vehicle has very limited downtime during their day, and either needs to reach a full charge quickly or top-up while en-route, e.g. whilst taking lunch or completing paperwork.
	### Home/work This refers to charging that a driver/vehicle can typically do over a long period of time at their home or at their workplace, where there is allocated space (either a drive or carpark) that enables them to do this. This typically means they can charge at 7kWh.
	### Near-home This refers to charging that can be accessed within a 5-10 minute walk from an individual's home and where a vehicle can be left securely for a long period, typically overnight. This means they can charge at 7kWh.
	### Destination This refers to charging that would be done at the place where a driver/vehicle has traveled to and stops for a significant period, either overnight or for a full workday, for example at a customer's place of work, leisure venue or hotel/B&B if staying away from home. This means that 7kwh is typically sufficient.
	### Depot This refers to charging that can be accessed by a driver/vehicle at their company depot, where the vehicle can park-up securely for long periods of time. The power of charging will differ depending on the operation, dwell time and how much power there is at the site. Depot also refers to rental branches where some members want to charge vehicles quickly to support utilisation and high turn around.

Clearly the installation of many of these types of charging will be primarily delivered by private CPOs, individuals, and businesses. But where the role of LAs will be crucial is in filling these gaps: both where there is not a commercial case for a private CPO to invest but a clear need, and where there are clear accessibility and reliability concerns.

Quality alongside quantity

The public and political pressure on a rapid roll-out of charging infrastructure has led to a focus on the number of charge points rather than their reliability or accessibility.

In practice, this means acknowledging that the most common use cases (personal car use), have tended to already be catered for, and focus is now needed on other vehicle requirements like adequate space for vans or disabled access needs that are not factored into the design of the majority of charge points.

> "LAs now need to lead on improving accessibility and standardising quality of EV infrastructure"
> Director, car club provider

Accessibility standards for disabled driver accessible chargepoints were a notable gap until recently, but standards have now been developed by the BSI and OZEV and can be used as a blueprint for LA-funded chargepoints.

There are clear benefits to a consistent approach to accessibility and reliability that can be taken forward by LAs and CPOs, either through tenders or at the point of installation.

Considering that up to 50% (1.35 million) of all drivers or passengers with a disability will be partially or wholly reliant on public charging when transitioned to electric vehicles, the risk of not considering this wider set of requirements is too great to be overlooked.

> "Central and local government have roles to play in coordinating the charge point rollout at a high level."
> Fleet manager, high street retailer

How Fleets Charge

Delivery services (distributed locations)
- Multiple calling points, and different routes every day
- Driven throughout the working day
- Van taken home by driver at the end of a shift
- Driver may not have off-street parking

Engineer/work van (non-depot based)
- Significant range and journey variation day to day
- Shift work, may be on call or away from base
- Vehicles taken home by driver at the end of a shift
- Driver may not have off-street parking

Engineer/work van (depot based)
- Significant range and journey variation day to day
- Shift work, may be on call or away from base
- Return to depot overnight

Medium duty HGV (depot based)
- Consistent daily mileage
- Typically returning to depot for extended periods
- Depot grid capacity critical

Delivery services (depot based)
- Multiple calling points, and different routes every day
- Driven throughout the working day with limited downtime
- Return to depot overnight

Company car
- Variable personal and business use
- May have long distance journeys
- Mainly return to home overnight

Private Hire/ride hailing
- Driven throughout the working day with limited downtime
- Vehicle taken home by driver at the end of a shift

Flexible vehicle (car club)
- Highly variable daily mileage
- Typically located in urban/city centres
- Limited downtime between rentals

Fexible vehicle (rental)
- Highly variable daily mileage
- Limited downtime and need to charge between rentals
- Customers need to charge at destinations

Disabled user
- Variable personal use
- Mainly return to home overnight
- Accessibility critical

KEY

Types Of Charging
- 🔴 Rapid
- 🔵 At Home/Work
- 🟣 Near Home
- 🟠 Destination
- 🟢 At Depot

Type Preferences
- ◯ Preferred Type
- ◯ Other Types

Key
Charging Challenges
- Grid Capacity
- ↔ Accessibility
- Payment Interoperability
- Limited Downtime
- Secure Parking

Section 2: Understanding use cases

There is no singular way that EVs in fleets will be used. Grouping together similar requirements and patterns of usage into "use cases" will allow those involved in the delivery of infrastructure to identify clear needs from what otherwise may seem to be an overwhelming diversity of different firms.

The challenges faced by individual drivers from locations of charging points to accessibility requirements are mainly determined by the different profiles of journeys made, and it is these profiles or use cases that can be usefully considered in the development of future infrastructure.

The following use cases were selected based on extensive interviews with fleet users, but even within the use cases themselves a broad range of experience was captured. We therefore recommend that these are taken as a starting point to categorise different journey types, rather than an end in themselves. The use cases are intended to be supported by ongoing engagement between fleet and LAs to ensure there are not more specific needs contained within these use cases that are excluded from considerations.

The different charging types and the defining requirements of each use case are highlighted on the visual on page 12; these were principally the need for grid capacity, payment interoperability, accessibility, security, and minimal downtime.

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Vehicle	Detail	Need
Delivery services (distributed locations) Vehicles used to deliver purchased goods to individual households and businesses.	Daily distance around 100 miles a day. Multiple calling points, and different routes every day. Driven throughout the working day. Vans may return home with driver or be left by store location. Driver may not have off-street parking and store may not have charging facilities.	No guaranteed access to secure overnight charging. Limited time to charge throughout the day but would need accessible rapid charging facilities close to pick-up locations, which can vary from town centres to residential streets. They also need fuel card solutions because the business is typically paying the cost.
Engineer/work vehicles (non-depot based) Vehicles used to carry out a job typically tooled up for that job, e.g. infrastructure maintenance/development vehicles, construction vehicles, utility providers.	Typically, 60-150 miles a day; 12,000-25,000 miles annually. Significant range and journey variation day to day, particularly in rural areas. Shift work, may be on call or away from base. Traveling to (often multiple) sites that may not have reliable charging facilities. Vehicles taken home by driver at the end of a shift. Driver may not have off-street parking. Vehicles with specific technical requirements (ability to work from back of van; towing capacity etc).	Need greater rollout of secure charging, to support charging at destination but also for those who do not have an at-home charging option. Accessibility of current charging spaces is a major concern. They also need fuel card solutions because the business is typically paying the cost.

Vehicle	Detail	Need
Engineer/work vehicles (depot-based) Vehicles used to carry out a job typically tooled up for that job, e.g. infrastructure maintenance vehicles, construction vehicles.	80-100 miles a day averaged across different vehicle uses. Significant range and journey variation day to day. Shift work, may be on call or away from base. Vehicles with specific technical requirements (ability to work from back of van; towing capacity etc). Return to depot overnight.	Needs energy infrastructure support to improve power capacity for charging point installations at depots. Needs the roll-out of rapid charging which can be used for top-up charging throughout the day (though this need may reduce as range improves).
Delivery services (depot-based) Vehicles used to deliver purchased goods to individual households and businesses.	Daily distance around 100 miles a day. Multiple calling points, and different routes every day. Driven throughout the working day with limited downtime. Return to depot overnight.	Need to be able to charge overnight with investment at depot facilities, but this creates pressure on local energy capacity and can be costly where there is insufficient power at the site. Will still need easily accessible top up rapid charging throughout day, that can be paid for by a fuel card equivalent.

Vehicle	Detail	Need
Disabled user	Variable personal use Mainly return to home overnight If there is not off-street parking, then reliant on on-street charging Accessibility critical	Major concerns around accessibility for disabled people, or those with reduced mobility. The charge point needs to be located at (or very close to) the user's home and where accessibility adjustments can be made. This includes consideration of weight of cables, surrounding space and the individual's confidence and comfort in using facilities.
Flexible vehicle users (rental cars)	Highly variable daily mileage Pay per day or week unit; typically picked up from a branch and returned at the end of trip. Branch sometimes associated with a transport hub (e.g. railway station, ports) Journeys within rental period highly variable but could include business travel, visiting friends or holiday activities Customers need to charge at destinations Limited downtime and need to charge between rentals	Rapid charging hubs to minimise downtime, but greater likelihood (than car clubs) of charging while rented, or back at physical rental location (contingent on appropriate power). Might be used by someone unfamiliar with EVs and EV infrastructure.

Vehicle	Detail	Need
Flexible vehicle users (car club)	Highly variable daily mileage Typically located in urban/city centres Pay-per-minute, short distance journeys Usage varies, but typically not used for more than 1-2 journeys over course of the rental period Limited downtime between rentals	Rapid charging hubs to minimise downtime, reliable locations in similar areas to where there is demand for the EVs, so vehicles do not need to be shuttled long distances.
Private hire and ride hailing vehicles	80-160 miles a day Driven throughout the working day with limited downtime Vehicles taken home by driver at the end of a shift	Rapid charging hubs to minimise downtime; reliable locations in similar areas to where there is demand for the EVs so vehicles do not need to be shuttled long distances.
Medium duty HGV (depot-based)	Likely returning to depot or dedicated site for an extended period Typically doing the same or similar journeys every day	Needs appropriate depot charging grid capacity for large battery. Needs support to explore options of shared infrastructure given high costs of grid upgrades.

The use cases illustrate that although no use cases are free from obstacles in switching to EVs, there are some fleets who have specific needs that will need to be addressed to ensure a smooth transition.

Grid connections as a barrier

Currently, there is no standardised process for new grid connections across DNOs to support the installation of charging infrastructure. This means that when installing infrastructure across the country fleets are having to complete different forms, pay different fees, are subject to different timescales, and do not always have the ability to make bulk applications to the same DNO.

> "The government is setting the targets in terms of what's needed but they should be supported by DNOs in terms of putting infrastructure in place"
> Head of fleet, Enforcement Agency

Across several use cases, grid connection was highlighted by fleets as a major barrier when installing charging infrastructure. These issues were particularly acute for those with van fleets (both logistics and delivery) who needed the capacity to charge at depot overnight, rentals who need charging near locations, and those with HGV fleets who are depot based and making the early transition to electric.

> "Some of their lead times and backlogs mean that my transformation has slowed down."
> Fleet manager, delivery company

Problems at all stages of the DNO process

At the crux of this is the fact that there are challenges for fleets – delays, costs, duplication – at all stages of the grid connection process, and therefore at any stage fleets may decide to delay installing charging infrastructure or give up altogether.

The different stages of the process are defined slightly differently by each DNO, but it is useful to broadly characterise them as: pre-application, application, quotation and design of works, and the delivery of works and connection. With these different stages in mind, we have explored the specific challenges and their impact on fleet decision-making.

Pre-application

Prior to submitting applications to connect, fleets need to understand how their future requirements might map onto their existing site's grid capacity, to enable them to fill out DNO forms and plan future infrastructure. This typically involves liaising with DNOs on what information is required and currently available electricity supply.

Fleets commonly suggested that issues appear even at this stage, because of the lack of accessible information from DNOs about their current grid capacity. This stops them from identifying which of their sites may have the headroom needed for chargepoints and hamstrings their planning, as they cannot identify critical factors such as likely costs, timescale and need. Where they were able to access this information, they suggested there was no common timeframe for receiving it.

> "We need a consistent way to ascertain what power is available and then apply for it as and when necessary."
> Assistant vice-president, rental operator

They are also sometimes charged for requesting and receiving information but with no consistency across DNOs, fleets do not know in advance whether or what they would be charged.

Application

Once they have the requisite information, fleets would typically move to apply for a connection, at which point they either submit a "connect and notify" or "notify and connect" form. This is a choice that is determined by the amount of energy required. "connect

and notify" can only be used if the energy demand is less than 60 amps and therefore a chargepoint can be installed within existing capacity. However, many fleets will be faced with the reality of constrained capacity and therefore need to fill out the "notify and connect form" which considers any required works prior to connection and the cost of this. To support this, there is no publicly available common form across DNOs and there are variations in the required information for each DNO's form. This leads to duplication in some places and an overarching lack of clarity for national fleets on what exact information is required of them.

This is exacerbated by the fact that even within individual DNOs – with one notable exception – there is no form for multiple applications by the same customer, so the duplication of activity cannot be managed at this level either.

> **"Putting in multiple applications at one time is energy- and time-efficient. Only one DNO allows this and unfortunately it is only 25% of our network."**
> Fleet manager, rental operator

Once the application was completed, fleets referred to long delays in receiving a response

or even in some cases no response at all to their applications. This meant they were either forced to delay their plans or not proceed, often having not obtained clear answers on why their application had not been responded to.

> **"You work at their speed. I don't feel that there is any governing body that can push them into working into a quicker time frame."**
> EV lead, rental operator

While the DNOs we spoke to highlighted that this delay was often because of lack of adequate information – the absence of an accessible common form, mentioned above, made it hard for fleets to know exactly what is required.

Quotation and design

After the application has been made, fleets typically receive a quote and proposed design from the DNO for them to check and accept if they wish to proceed with the works. To accurately cost this, DNOs may have made a site visit or provided a survey.

Fleets referred to delays in moving between having their application accepted and the receipt of a quote with full cost breakdown

for the requested works. There might also be charges associated with the quote, with a number of fleets referring to specific fees being applied to surveys that were conducted as part of the quotation process.

> **"I am already paying a lot of money for a power upgrade and I now often have to pay them for a survey to provide a quote"**
> Head of fleet transformation, delivery company

Any delay in the acceptance of a quote and the commencement of work is particularly problematic. The initial quotes for any required works are only currently valid for six months, so could expire before fleets even begin their works, with the obligation then falling on fleets to re-initiate the process.
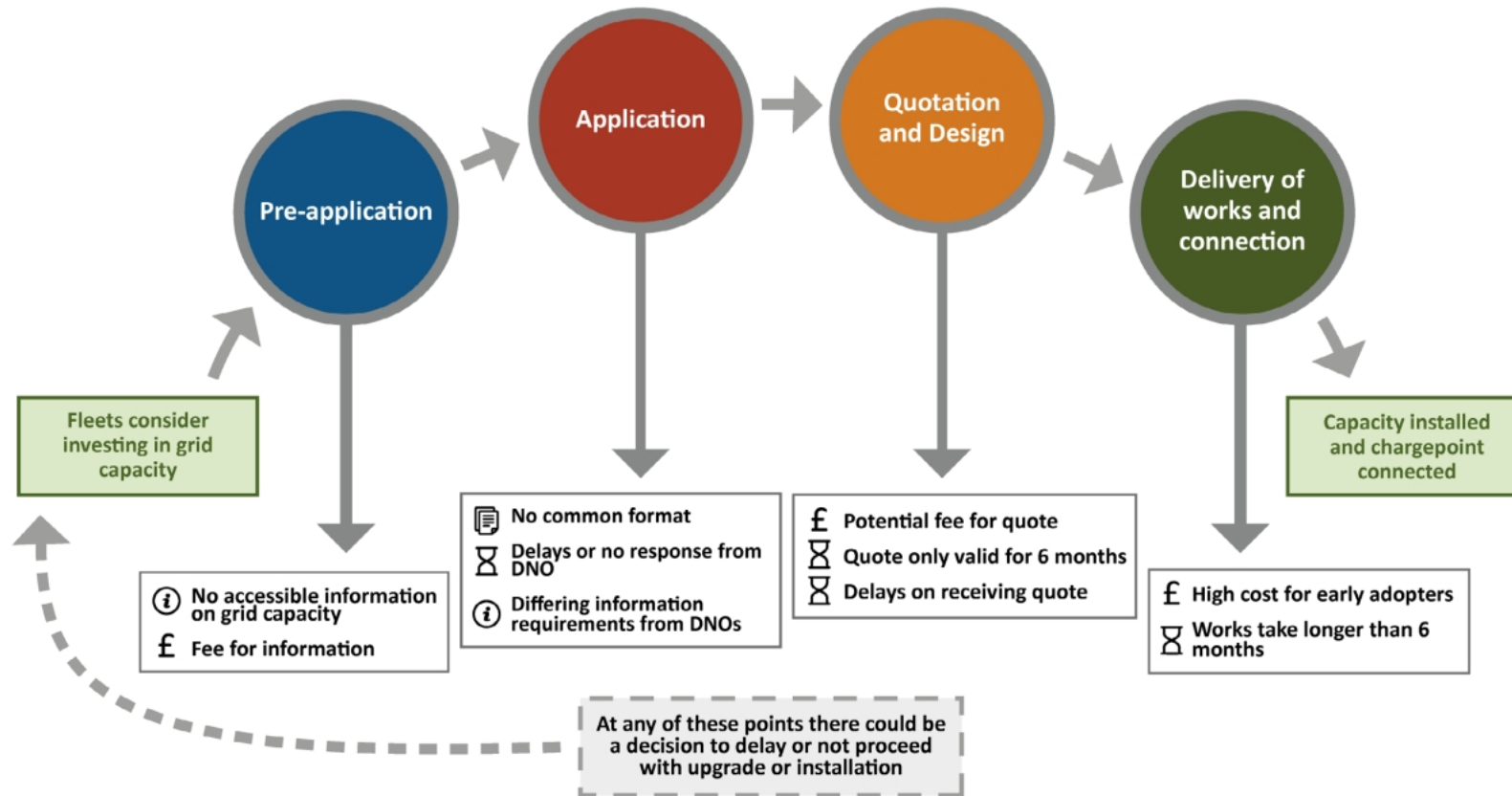
Delivery of connection and works

Once a quote has been accepted, the works can be initiated, this can range from reinforcements to new cabling, to the installation of a dedicated substation. The relative ease of any works will typically depend on associated street works, planning permission and who owns the land.

The experience of fleets was that all required works frequently took longer than the illustrated timeframes indicated by DNOs – and that there was no real maximum timeframe for completion. Delays were blamed on absence of service level agreements that DNOs had to fulfil as part of their Ofgem obligations. The cost of works also remained a significant barrier for fleets. While much has been reported about the changes to costs of works, fleets did not fully understand the impact of Ofgem's forthcoming changes to the cost structure of grid upgrades, from 1st April 2023. Many were sceptical that they would see a meaningful reduction in the cost of works.

Challenges fleets face in the current DNO process

Pre-application

Application

Quotation and Design

Delivery of works and connection

Fleets consider investing in grid capacity

Capacity installed and chargepoint connected

ℹ No accessible information on grid capacity

£ Fee for information

📄 No common format

⧗ Delays or no response from DNO

ℹ Differing information requirements from DNOs

£ Potential fee for quote

⧗ Quote only valid for 6 months

⧗ Delays on receiving quote

£ High cost for early adopters

⧗ Works take longer than 6 months

At any of these points there could be a decision to delay or not proceed with upgrade or installation

Key
Fleet Challenges

📄 No common format

£ Cost

⧗ Delay/Timescale

ℹ Lack of Information

Key
Stages of process

Pre-application — Includes guidance provided by the DNO and any requests about current capacity

Application — Includes the current "notify and connect" and "connect and notify" process

Quotation and Design — Includes the receipt and acceptance of a quotation and any discussion around the specific works to be undertaken

Delivery of works and connection — Includes upgrades in grid capacity, new connections or substation upgrades, and the connection of chargepoints

Need for a standardised process

The key factor blamed for the challenges highlighted was the lack of a common, regulated process for new grid connections across the different DNOs. Fleets believed this was leading to costs, duplication and delays across all four stages of the process. They suggested that this was a particular issue for fleets because it was leading duplicative, time-intensive activity by businesses and significant variation in their experience of installing infrastructure. This presents a risk that fleets might be encouraged to delay the process in some geographical areas, but not others thereby delivering disparities in infrastructure across different DNO areas.

> **"It needs to be standardised because we're national businesses and we have to deal with four potential different operators [DNOs] and their different ways of doing things"**
> Head of fleet, Enforcement Agency

There were emerging areas of good practice by some DNOs. For example, UKPN have created a site planning tool through their Optimise Prime project which allows fleet to estimate the capacity of their sites, as part of the optimisation of charging. They also have
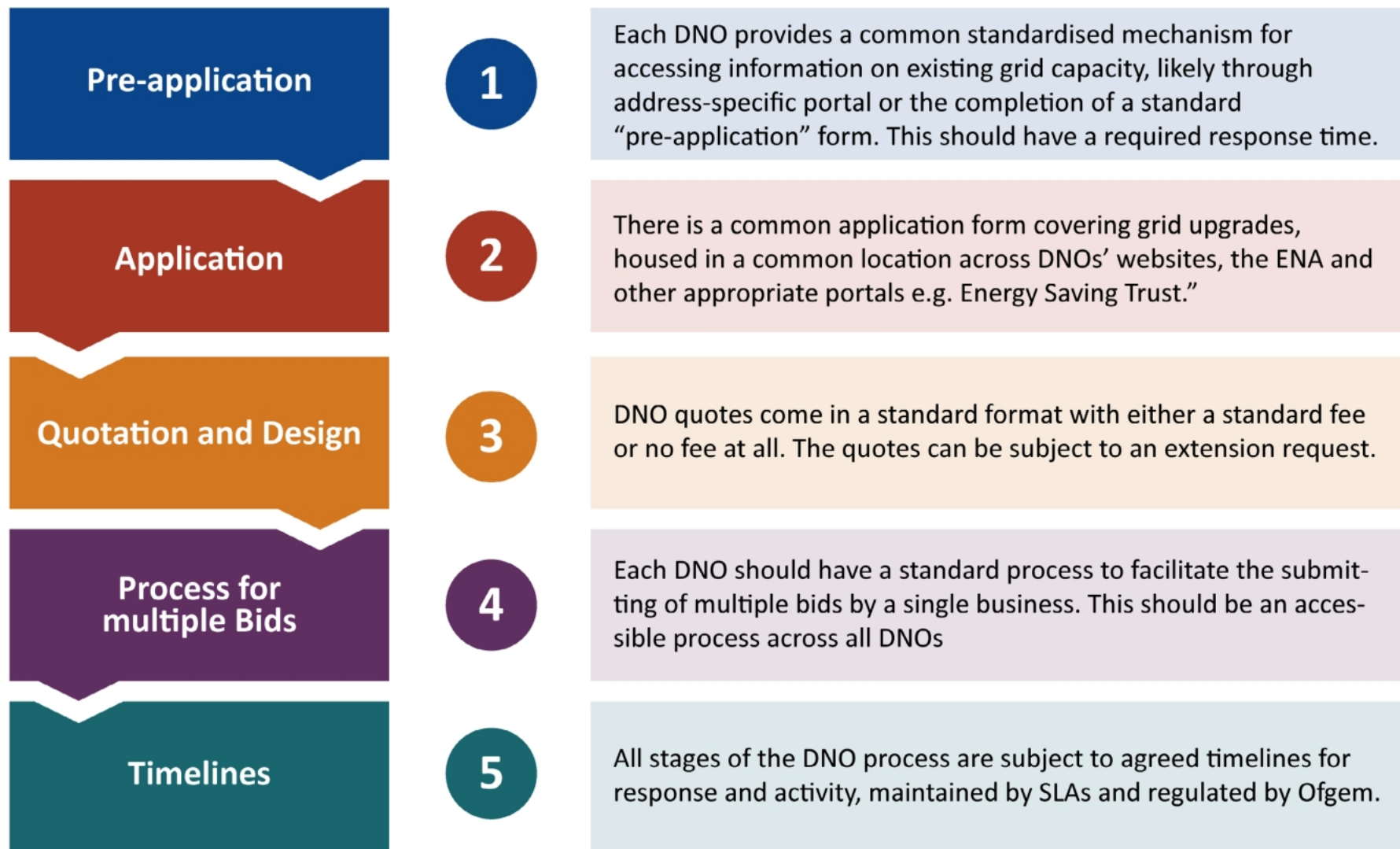
a separate form for enquiring about existing grid capacity (know as a "nature of supply" request) which facilitates business accurately knowing how much capacity is available on their site, depot or at branches.

Similarly, SP Energy Networks are currently developing an online tool for fleets to see where the electricity network has the capacity to support installations and provide cost estimates for this, as part of their Charge project.

However, there was generally a limited awareness about areas of this type of good practice among fleets because of a lack of central coordination and communication across DNOs. In the below diagram we have outlined what an ideal standardised process for all DNOs might look like and how this would support fleets dealing with grid challenges.

What an ideal standardised process looks like

Pre-application — **1** — Each DNO provides a common standardised mechanism for accessing information on existing grid capacity, likely through address-specific portal or the completion of a standard "pre-application" form. This should have a required response time.

Application — **2** — There is a common application form covering grid upgrades, housed in a common location across DNOs' websites, the ENA and other appropriate portals e.g. Energy Saving Trust."

Quotation and Design — **3** — DNO quotes come in a standard format with either a standard fee or no fee at all. The quotes can be subject to an extension request.

Process for multiple Bids — **4** — Each DNO should have a standard process to facilitate the submitting of multiple bids by a single business. This should be an accessible process across all DNOs

Timelines — **5** — All stages of the DNO process are subject to agreed timelines for response and activity, maintained by SLAs and regulated by Ofgem.

Recommendations:
Overcoming grid connection challenges

- **The Energy Networks Association (ENA) should support DNOs to adopt a standardised process and timings for all stages of grid connections and upgrades.** This is needed to alleviate the challenges fleets face when interacting with DNOs, whether they are seeking information on supply or commissioning work.

- **The ENA should encourage DNOs to provide a common, easily accessible, mechanism for establishing all elements of capacity at a site.** This mechanism should only require basic information about a site and provide capacity information in a timely manner

- **Where upgrades are needed, the ENA should work with DNOs to promote common forms and inputs that are accessible in advance.** This would save time and reduce the number of mistakes made during grid connection applications.

- **Ofgem should review DNO Guaranteed Standards of Performance (GSoPs) to incorporate existing connections and create required response times at each stage of the grid connection process.** This would allow businesses to know when to expect information on the cost and process for installing power and to seek alternatives where upgrades are too costly or too complex.

- **Ofgem should encourage DNOs to consider where upgrades by businesses in similar locations could be coordinated to reduce costs and delays.** Currently only the DNOs have visibility of businesses going through the same grid upgrade process at the same time and locations.

- **LAs should establish a process for sharing charging infrastructure among fleet operators.** Currently the sharing of infrastructure is reliant on businesses coming together organically; LAs could enable such arrangements by matching expressions of interest from businesses who are willing to share their infrastructure and those from fleet users who are looking to utilise others' infrastructure.

Emerging challenges for HGVs

The context for the HGV transition

HGV use cases were highlighted as some of the hardest to transition, with operators stressing the need for wider certainty on the technology roadmap for decarbonisation. There is a high degree of uncertainty among operators about whether BEVs or another zero-carbon solution - like hydrogen - may be more appropriate. Despite the welcome announcement of the Zero Emission Road Freight Trials (ZERFT), operators suggested it was not well understood how this is going to translate into preferred options for specific use cases. For example, the DfT trials into catenary systems are causing confusion about how far operators themselves should be investing in refuelling or recharging infrastructure as opposed to fixed line options.

> **"The conversations that I hear about electric versus hydrogen seem to have so many inconsistent messages."**
> Head of sustainability, delivery company

Due to this uncertainty, operators are only focusing on the immediate future and the limited number of use cases that have decarbonisation solutions.

These use cases are typically restricted to journeys where daily mileage requirements are met by the current range of medium-duty HGVs on the market and where they can operate on a back-to-base charging model. As a result, beyond depot-based fleets, it is difficult for operators to indicate what type of infrastructure is needed and where it would be best placed.

> **"The larger the vehicle size, the more challenging going electric becomes."**
> Fleet manager, retailer

Operators require further clarity to ensure there is the appropriate infrastructure to support viable new low-carbon HGVs as they become available. As highlighted in the BVRLA Road to Zero Report, a zero-emission HGV roadmap is needed to provide greater certainty on which drivetrains are likely to meet users' needs. This would allow fleets to not only plan current recharging and refuelling infrastructure more effectively but also to better communicate what infrastructure is likely to be needed in the future as they transition various use cases.

> **"Unlike a battery that you can store under a vehicle which has no effect on trailers. Chances are with hydrogen you are likely to have a bigger tank than diesel, so how do you store it and still have the viability of an artic trailer combination?"**
> Head of fleet transformation, delivery company

In most cases sites are leased rather than owned by the fleet operator. This can make it difficult for them to gain all appropriate permissions to install chargepoints or to make enquiries about obtaining the power needed to support them. Specifically, where the fleet operator needs to seek the permission of the landowner to make any changes or receive information, this can lead to further costs and delays, or potentially a decision not to invest.

Even when operators did gain the necessary permissions from landowners to install chargepoints, they advised that short lease terms for depots or sites often prevented them from doing so. This was due to lengthy repayment timelines for infrastructure that often extended well beyond the duration of site leases.

> **"Some of those contracts that we're in may only run between three and five-year cycles and significant investment infrastructure would require a longer contract length. We're looking for 10 years plus on the repayment of some of these installations."**
> Head of fleet, Enforcement Agency

Operators report some instances where insurers are also creating challenge due to stipulations about where chargepoints need to be located. A number of operators advise that, due to concerns about fire risks, they have been instructed by insurers that the chargepoints must be outside of the depot. This will lead to the operators having to change their current business operation and cause delays as they work through how best to accommodate this.

> **"The big one for us is building regulation RC59 which is all about how close you can go to buildings and flammable objects. We take the guidelines very seriously and our insurance companies expect us to. This limits us in specific sites."**
> Head of fleet transition, delivery company

Grid capacity as a barrier to transition

The issues around depots were compounded by the grid upgrade process, which presented significant costs and uncertainty to the operator and is characterised by an inconsistency in the process adopted by the different DNOs.

> **"The grid infrastructure in some areas in the south west is poor. There are constraints"**
> Net-zero project manager, local authority

As the BVRLA has highlighted, most fleets experience considerable barriers in terms of upgrading their power capabilities. With larger vehicles, these challenges are likely to be particularly acute as power requirements will be even greater than with cars and vans. To support the transition, a standardised process is needed to ensure that fleets have visibility on existing grid capacity. Grid upgrades also need to be rapidly delivered if the investment is to make sense for fleets.

> **"We've got 1600 HGVs. How do you charge that? You'd need the power of Oxfordshire!"**
> Fleet manager, delivery company

> **"It's about all of these challenges: space, electricity, capacity and cost. It's about £50,000 to put a diesel tank in, to put in any charging solution that is suitable would amount to £2m per site... It's a huge, huge cost."**
> Fleet manager, logistics provider

Opportunities for sharing

HGV charging facilities are likely to require significant investment in sites and depots as a result not only of power requirements, but also the complex planning and building regulations from their insurers and health and safety bodies.

Therefore, while most operators were focused on developing their individual charging solutions, many also suggested that they remained open to sharing infrastructure in the future. This would allow them to share costs, maximise space and manage the administrative challenges encountered.

> **"We would promote the sharing option – why wouldn't you? It manages the cost and enables better access."**
> Fleet manager, construction company

Shared infrastructure could be located either at an operator's depot, at strategic sites for businesses such as industrial parks, or could take the form of HGV charging hubs managed by local authorities or by private landlords. The charging hubs concept was less well developed, but operators suggested it could be part of an evolving solution if the right public funding was available to either private operators or LAs.

> **"It should be done at specific locations by the operating businesses. It might be that you do have a centre run by the LAs for HGVs."**
> Fleet manager, construction company

Some operators have already made a significant investment to electrify their depots and would be willing to open them to other fleet users.

Local authorities could play a fundamental role in enabling this kind of arrangement by taking expressions of interest and matching those willing to open up their depots and those in need of utilising others depot infrastructure. This could reduce the need for firms to invest in their own depot-based charging, improve investment returns for those who have invested and reduce the impact on the grid.

Challenges for rental fleets at airports

The urgent task facing rental operators

Rental operators are working to rapidly decarbonise their fleets and airports are a key part of that challenge. These transport nodes are often central to the major rental firms' UK operations, with large volumes of vehicles moving through the airport, high utilisation rates and fast turnaround times.

Of all the businesses running on or around airports, rental operators, will be amongst the first to switch to zero emission operations. Rental firms desperately want to see the speedy rollout of appropriate charging infrastructure to support this. A single airport rental site will do hundreds of rentals a day, often receiving a returned vehicle, valeting it, and re-renting it in under an hour. This limited downtime means that access to their own on-site charging infrastructure is critical. This needs to be supported by well-located, reliable charging infrastructure in and around the airport.

"If you look at a large airport location with 1,000 cars… we need to get those cars turned around as quickly and efficiently as possible in order to have them ready for the next customer."
Fleet manager, rental operator

Rental operators are already operating BEVs at airports and expect to see this fleet grow rapidly over the coming years. They need to now plan to ensure they will have the infrastructure required to support these vehicles. Planning for charging infrastructure is complex in most locations but the number of different stakeholders and processes involved at airports makes it uniquely challenging. While airports are taking steps towards decarbonisation, more collaboration is needed to bring the wide range of stakeholders together to get the right infrastructure in the right place at the right time.

A complex stakeholder eco-system

Airports are characterised by a complex ecosystem of stakeholders, that have a range of operational and strategic responsibilities. Strategic stakeholders either inform or are informed by the airports' commercial objectives and typically have a role in airports' decarbonisation strategies. Operational stakeholders are responsible for the regular running of the airport and its day-to-day relationships with concessions – like rental operators.

Airport operators are regulated by the **Civil Aviation Authority.** They control the way in which airports tender to concessions and what information is made available to them as part of the tendering and leasing process. This is to ensure fairness to consumers. They do not engage directly with rental operators but would have the ability to instigate any standardisation in the way in which they are treated by airport operators.

Airport operators have ultimate responsibility for setting the decarbonisation strategy for the airport. They also dictate the commercial objectives of the airport and hold the contractual relationships with concessions like rental operators. There are disparities in the way each airport operator is seeking to decarbonise their operations and the timings for these plans.

Rental operators are often excluded from discussions about the airport operator's wider decarbonisation plans. This has consequences for both the rental operator, who cannot implement their own EV infrastructure strategies without knowing what the airport has planned and for the airport operator, who could benefit from closer alignment. Working more closely with the rental operators is critical to ensuring that airport operator strategies support the decarbonisation of the entire airport's operations.

> **"Airports have ambitious goals to meet the 2050 net zero requirements for European airports and a lot of them have brought those goals forward, but we don't have a seat at the table."**
> Fleet manager, rental operator

The landscape is further complicated by the number of operational teams that sit beneath the airport operators themselves. While the specific roles of each stakeholder can vary between airports, there are some key personnel who rental operators must engage with when looking to install charging infrastructure at their sites. Rental operators reported most commonly interacting with **facilities, health and safety, property and engineering.** Facilities are responsible for day-to-day interaction with rental operators and conversations about the power supply, while property supports any alterations to the leased site. Health and safety provide permits for changes to the leased sites and can stipulate how chargepoints need to be installed, with engineering signing off any electrical works. In addition, some airports have also engaged **consultants** to support on specialist EV capacity studies or analysis.

> **"To install infrastructure, you have to work with lots of teams in the airport: health and safety on permits and facilities on capacity and that is very time-consuming."**
> Fleet manager, rental operator

The lack of a coordinated approach amongst these teams is leading to added complexity and potential delays as rental operators look to install charging at their airport sites ready for the scale up of their electric fleet. The lack of a central contact point makes it difficult to find out the existing power capacity on site and then to progress any connections or works required to deliver the charging infrastructure.

Power supply is key to any airport decarbonisation plan. Airports often rely on their own 'private power networks', rather than DNOs, because of their huge power capacity requirements. Whether the power is provided by the **DNO or a private power network,** the power provider either interacts directly with, or is owned by airport operators, and therefore is not required to regularly engage with rental operators.

Grid capacity at airports is frequently constrained and rental operators do not have the requisite information from the power provider to understand how this might impact

their ability to install infrastructure. This stops them from identifying which airports have existing grid capacity to install chargepoints and/or planning for required future infrastructure. There is no clear process for either accessing this information or initiating the process for a new connection; with rental operators totally reliant on the information airport operators and their operational teams choose to make available.

> **"I can't do anything about communicating with DNOs on behalf of airports. They have control of their own supply of electricity."**
> Fleet manager, rental operator

As a final part of their charging infrastructure considerations, rental operators flagged the need to engage with **private chargepoint operators (CPOs)**. Private CPOs will deliver some on-site infrastructure in response to tenders and will identify any commercial opportunities in the immediate periphery of the airport to serve airport and rental users.

Currently, rental operators are not convinced that this infrastructure is being delivered to support rental customers' needs and request that they are brought into the conversation to better understand charging deployment in the airport and its surrounding environment.

Strategic Stakeholder	Role
Civil Aviation Authority	• Regulates investment in airports • Regulates how electricity is charged to airline operators and other concessions
Airport operator	• Creates strategic vision for airport decarbonisation • Landlords for fleet and rental operators
Rental Operators	• Engages across the airport's operational teams rather than one central contact • Leases their site from airport operator
Chargepoint operators	• Responsible for some installation at the airport • Identify commercial opportunities to deliver charging around airport periphery
Private power networks or DNOs	• Airports either served by relevant DNO or in some cases their own power network • Either the DNO or private network will process grid applications, control power supply and advise on grid capacity
Airport fleet	• The main focus of airport operators' EV transition • Most fleets will be airside

Concessions situated on airport sites will often have to deal with a number of operational stakeholders.

Operational Stakeholder	Role
Health & safety	• Involved in permitting and approvals on leased land at airport sites
Property	• Typically cover alterations to airport estate • Overlapping role with surface access/ facilities
Engineering	• Typically sign off and support any electrical works/external contractors
Surface access/ facilities	• Typically the principal contact for rental operators • Involved in permitting on leased land at airport sites • Point person for access to airport power supply
Consultants engaged by airports	• Engaged to help with facility planning • This could include EV capacity studies and/ or analysis.

Delivering the required charging infrastructure at airports

When rental operators are looking at how to charge their EV fleet at airports there are a few options that they can consider.

Charging at existing rental site

The ability to install charging on their rental site is seen as critical for rental operators to maintain their business operations. It minimises the downtime of the rental vehicles, keeps them on the rental site and facilitates maximum control over the charging infrastructure itself. It also supports charging vehicles that need to be topped up when they return to the branch, ensuring that they can be rented again with sufficient charge.

> **"We're always going to need some kind of facility whereby the rental companies themselves have got access and ready access to charging solutions of some sort."**
> Fleet manager, rental operator

From the rental operator perspective, the difficulty with this solution is that it relies on adequate power on site and a clear process for installing new connections and any requisite

upgrades, which airports currently lack.

Airport operator lease agreements currently disincentivise this kind of investment in proprietary charging infrastructure by rental operators. Terms are only 3-5 years, meaning that they may lose the site when the lease comes up for renewal. As a result, it is risky for a rental operator to invest time and funding in a site.

Charging at airport periphery

Rental operators indicated a role for more reliable infrastructure in and around the airport, to facilitate customers re-charging vehicles when they set-out from or return to the rental branch.

Customers will typically have very limited time to charge their vehicle before returning to the airport, so rapid, reliable and easily accessible charging is needed in the airport's periphery. The customers may not be familiar with the UK's charging network or even with charging a BEV, so the infrastructure needs to have easy payment options and signposting.

> **"The problem is if consumers don't have the ability to charge it reflects badly on us."**
> Fleet manager, rental operator

Currently, rental operators do not have visibility of whether this infrastructure is likely to be installed or confidence in its accessibility and reliability.

Shared infrastructure

In some cases, an airport operator will provide a charging facility that can be utilised by rental operators, as well as other airport users, such as taxis/private hire and the public. Most rental operators did not consider shared infrastructure an appropriate solution for the charging of rental fleets given the high levels of utilisation and quick turnaround of rental vehicles.

Where sites are open to public access or other users, they raised concerns about how they can minimise downtime if they must wait to charge and then wait again once the vehicle is charging. There are also concerns about vehicle turnaround (valeting and inspecting) speed if the vehicle needs to be moved off site to charge and then returned before being rented out again. If charging at a shared site could be booked, this would alleviate some of the concerns raised but lead to further questions about how chargepoints could be allocated fairly amongst the rental operators at the airport.

Rental operators were also concerned about how shared charging assets might be

interoperable with their own on-site charging facilities (as and when they installed these) and proprietary software to calculate cost and performance. There were also unanswered questions about who would pay for the installation of shared infrastructure, its maintenance and upkeep.

Rental operators were willing to work with the airport to assess how shared infrastructure could support its operations, but stressed that given the challenges, there would need to be open dialogue throughout the planning stage to overcome concerns and to ensure that the rental operators' needs are being met.

The delivery of infrastructure for rental at airports

	Detail	Groups with stake in delivery	Challenges
Infrastructure at airport periphery	Public infrastructure installed near the airport (1-5 miles) enabling customers to recharge before returning vehicles to a rental branch It would also provide charging for other vehicles serving or going to/from airport branch	**Strategic players:** ✈ 🚗 ⛽ **Operational players:** none	Requires public or private investment in strategic locations close to airport, outside of towns/cities or motorway service areas. Must be simple to use (contactless; open to roaming; clear signage; with instructions), accessible and reliable to service rental users, including those unfamiliar with the UK network.
Private infrastructure at rental operator on airport site	Infrastructure installed by the rental operators to facilitate charging of their fleet at their site Airports can decide the mix of rapid or slow chargers that is needed to support operations	**Strategic players:** 📝 ✈ 🚗 🗼 **Operational players:** 👷 🏗 🛡 🪪	Charging infrastructure speed and proximity will be vital to ensure the required swift vehicle turnaround, when customers have not returned their vehicle with adequate charge. Requires rental firms need to be willing and able to fund installation (including on leased sites), have access to grid capacity and for there not to be health and safety barriers.

	Detail	Groups with stake in delivery	Challenges
Shared infrastructure on airport site	Dedicated rental operator shared infrastructure at airport This infrastructure might also cater to a number of other commercial fleets at the airport on a predetermined basis e.g. private hire vehicles, logistics operators	**Strategic players:** **Operational players:**	Must be designed in collaboration with rental operators to ensure is fit for purpose. Should be rapid charging to minimise downtimes and maximise usage. Need for clear terms use and management rules. Options considered should be specific allocations, bookable slots or a mix. Need fair clear payment structure for both allocated charger installations (if this is done) and their use. Need to be clear terms of use on who is responsible for maintenance based on allocation.

Process

A standardised, simple and clear process is needed to support airport operators in delivering infrastructure that is appropriate for their rental operator tenants. The BVRLA has created a checklist that seeks to initiate that process. If followed, it would address both rental operators' high-level concerns about the lack of engagement in decarbonisation discussions at airports, and the operational challenges of installing infrastructure.

As a starting point, it is suggested that airports set out how they plan to involve rental operators in the decarbonisation discussion.

To support better engagement at an operational level, airports should consider identifying a single point person or team within the airport whom rental operators can advise on the issues relating to charging infrastructure. It is vital that the empowered team or point person then consider the commercial arrangement for rental operators, the power capacity at the site and the maintenance and installation of any shared infrastructure.

These arrangements are all vital to giving confidence to rental operators to transition to BEVs. Rental operators are open to identifying innovative solutions, but they fundamentally rely on the delivery of the right infrastructure.

Checklist for Airport Operators

Airports can support fleet decarbonisation and build robust charging provision in and around airports if they:
✅ Set out how they plan to engage rental operators in their developing decarbonisation strategies, as part of reducing scope three/surface access emissions.
✅ Identify a single point person within the airport who rental operators who can advise on planning, permitting, health and safety and power capacity in relation to charging
✅ Make power capacity information of rental sites available as standard through the identified point person.
✅ Agree with fleets at airport how allocations of any shared infrastructure will be made and ensure there is a formal agreement in place before the infrastructure is
✅ Give rental operators early clarity on who is expected to install and maintain infrastructure.
✅ Explore how airports, working with rental operators can better utilise any commercial charging opportunities around the periphery of the site.
✅ Consider how capital expenditure on chargepoints and grid infrastructure by operators could be reflected in lease lengths and agreements.

Recommendations:

Airport infrastructure

- **DfT and other relevant stakeholders should work with airports to ensure that rental operator needs are reflected in decarbonisation plans.** Currently, airports are not engaging with rental operators as standard in the development of decarbonisation strategies. Government and other stakeholders need to consider rental operators as a key partner in airport decarbonisation.

- **Airports should work with rental operators to embed an appropriate process for EV charging infrastructure planning.** Through enhanced engagement, airports can develop a credible route to decarbonising a key transport provider. Having a single point of contact, transparency on capacity challenges and clarity on roles and responsibilities for charging infrastructure is necessary to unlock airport rental BEV uptake.

- **The CAA should mandate that airports provide information to rental operators on power constraints at their locations and the airport's planned grid upgrades.** If this information was supplied, it would enable rental operators to plan charging infrastructure and engage with the airports to ensure their capacity needs are met.

- **OZEV should work with airports, DNOs, CPOs and fleets to understand their power requirements and possible support needed.** To ensure that suitable charging infrastructure is delivered and power capacity is not a barrier, the Office for Zero Emission Vehicles (OZEV) needs to bring together all relevant stakeholders to consider likely requirements of fleets, the process for grid upgrades and responsibility for costs.

Section 3: Future Expectations

Fleets are decarbonising fast. The challenge is to match this pace with charging provision.

The 2030 phase-out date for ICE vehicles has created a clear and present deadline for companies to changeover their fleets. The requirements described for each use case should not be taken as self-created barriers by reluctant fleets. All fleets indicated an appetite to change vehicles and a desire "to think differently", suggesting government targets, their own net-zero commitments, and customers were driving the transition.

This was just as true for smaller and medium-sized businesses as for larger ones. All fleets were clear that there are growing expectations from other businesses in their supply chain that they would seek to reduce their emissions through electrifying their fleet. As the use cases show, the diversity in charging requirements is not dictated by sector or company size, but by the types of journeys that companies felt they were able to transition. Fleets were typically pursuing a staged transition, prioritising those vehicles (and drivers) they felt would be easiest, most cost-effective, or more receptive to transition.

In many cases, this prioritised those with access to home or workplace charging.

But getting charging right matters. When making the decision to transition, charging infrastructure emerged as the key concern for fleets, second only to the availability of the right kind of vehicles for the job.

Companies focused on those vehicles in their fleet that they were not able to transition yet, but which represented large proportions of their fleet: this included rental vehicles in constant use, utility vans providing essential services and construction workers who rely on their vehicle to do their job.

Addressing gaps in provision

The clearest gaps identified by fleets were in the provision of rapid charging in locations other than motorways. Typically, where transition could or had been made, the driver had access to depot or home charging, or it related to a company car, where users may typically have greater flexibility on charging location and dwell time. Where fleets found it most difficult to envisage the transition was where they needed to minimise downtime – therefore needing rapid charging in a convenient location.

These concerns were strongest with the large numbers of commercial fleets where the vehicle is based at or returned to home, but the drivers do not have access to secure and private off-street charging. These drivers would be limited to the public network, and unless there is adequate and secure infrastructure close to home for overnight charging, will need a reliable and accessible rapid infrastructure that works not just for top-up charging, but to meet their full charging needs.
This need particularly applied to those fleets that were not frequently on motorways and might find themselves in rural locations providing vital services, but it also extended to supermarket delivery vehicles, who were on busy high streets or residential areas without rapid charging hubs.

Fleets also emphasised that the process between distribution network operators (DNOs), energy providers, Ofgem and LAs needed to be streamlined so that fleets could provide their own charging solutions. There was frequently a desire for businesses with an appropriate depot to install their own charging infrastructure, but the process for doing this emerged as a blocker. There was concern not just about reinforcement or extension costs (where the policy attention has been focused) but over process, timelines and collaboration between the public and private sector.

This friction presents a particular problem for fleets, who are frequently transitioning several vehicles to electric, restructuring operational infrastructure to install points and incurring significant costs.

Recommendations:

LAs should consider how they include the fleet sector's needs in their EV infrastructure strategies. Charging demand from fleet users living and/or working in the community is critical for infrastructure planning. LAs should engage with fleets to understand their requirements.

OZEV should provide guidance to LAs and CPOs on the practical measures needed to ensure that fleet users are catered for. Fleet concerns around accessibility, size of bays and ease of use need addressing. Government is well placed to coordinate and share best practice among LAs and CPOs.

A utility provider with an emergency repair fleet
User profile: engineer/work vehicles (non-depot based)

Point in transition: 550 vehicles in fleet are currently electric and a further 350 on order but these are primarily company cars; they are now considering transitioning their repair vans.

Typical journey: Vehicles operating in 10-hour intervals normally travel from home to depot to get parts, then head out to single or multiple locations and return to the driver's home. Vehicles will then be on a rotational standby shift pattern, so out of hours use needs to be considered. However, with bigger issues like restoring power after a storm, a driver may lodge overnight or for a few nights.

Focus of requirements: Charging typically needs to be done at or near home, to limit travel time and charging within working hours but this needs to be supported by a rapid charging network to occasionally support them on the move or when lodging away from home.

Sticking points: Drivers are on tight timescale so need easy-to-use rapid chargers. But on-street rapid charging or even hubs are designed for cars rather than vans.

A supermarket with a grocery delivery service
User profile: delivery service (distributed locations)

Point in transition: Early-stage trials, <5% of total fleet currently electric, awaiting vehicles with frozen food storage capabilities.

Typical journey: Vehicles will be travelling from about 6am to 11pm but will reload at stores during the day. Vehicles will be typically restricted to one area to do drop-offs but can still travel >100 miles. Vehicles tend to be stored at/ or near stores.

Focus of requirements: Charging likely to be easiest and most cost-effective using public charge points, but they need rapid charge points that are accessible near the supermarket locations to ensure that they are not making long deviations carrying perishable food.

Sticking points: The area where the supermarket is most likely to convert to EVs (e.g. London, urban areas with Clean Air Zones) typically have limited parking, especially for larger vans that need more secure parking and larger charging bays.

Equipment rental business with a fleet of vans
User profile: engineer/work vehicles (depot based)

Point in transition: Early-stage trials; roadmap to 2030 to transition almost half the commercial fleet to electric.

Typical journey: Vehicles rarely do the same journey twice; typically stopping around four times either at customer locations or making returns to depot.

Focus of requirements: Installing charging infrastructure at depots for overnight charging is ideal but doing this for full fleet has challenges for power capacity. Publicly available rapid charging top-ups during workday essential to meet customer requests.

Sticking points: Already encountering delays when putting in requests for charge point installation with DNOs. Assessments of drivers' ability to charge at home indicate there will be major reliance on public charging, which is currently unlikely to meet working day needs.

Large multi-national car club fleet
User profile: Flexible car users (short-term rental, car club)

Point in transition: EVs are a minor part of the overall fleet due to challenges with accessing on-street charging infrastructure.

Typical journey: Very short-term hires, often "by-the-hour"; typically travelling short distances to complete specific tasks. Although they are short in duration, they are typically round trips (e.g. to visit friends or family). Rapid turnaround time between hires.

Focus of requirements: Rapid charging network, which is easy to identify and use, with urban rapid hub charging roll-out rather than restriction to motorways.

Sticking points: Drivers pay by the minute/hour, so are reluctant to pay for time the vehicle is unused and to go out of their way to find chargers. People are hiring for a quick, convenient solution to an often sudden need they have, so any perceived barrier to convenience is cited as a major concern. This concern is increased by lack of common familiarity with EVs.

Building trust

The reliability of infrastructure - even where it is available – emerged as a particular concern, given the kind of services fleet and rental vehicles provided. Fleets suggested that information about the availability, condition, and kind of charger available was integral to them being able to operate smoothly. For example, engineer/work vehicle drivers would typically need to access charging during work hours (even where they were depot-based) and their ability to wait around was limited.

Where only one charge point is available, the inconvenience caused when it is either out of use or already occupied is much higher than if there were multiple charge points available at the same location.

This is particularly pertinent for rental vehicles, where there are short turnarounds between rental periods and where there is a need to reassure customers, many of whom are trying EVs for the first time, that they have sufficient range. In this instance, a focus on a hub model or a greater number of chargers in a location would increase confidence for customers or employees charging vehicles between rental periods that at least one charger will be available.

Recommendations:

OZEV should pre-emptively set out how it intends to enforce its new reliability standards.
This would incentivise early action by CPOs and inspire confidence in fleets. It could include publishing the specific standards and repair times that are required under the 99% reliability metric.

OZEV should ensure open data can be used to demonstrate the accessibility of chargepoints, facilitate virtual queuing and the booking of slots.
This will support fleet use cases with limited downtime to quickly identify available and accessible chargepoints.

A joined-up approach

The devolution of managing the roll-out of EV infrastructure to LAs can allow for targeted and tailored approaches to local charging needs. However, this will increasingly need to balance risks of not accounting for cross-LA needs, and the emergence of fragmented provision approaches.
The focus on local roll-out was the right approach for government in ensuring communities are provided for in the transition, but it now needs to account for journeys extending over or travelling through multiple LAs. This will enable us to avoid a "patchwork" effect, with different approaches and levels of provision across the country, impacting the potential of a country-wide transition to EVs.

In particular, estimating future demand based only on local EV registrations or the size of resident populations will not account for fleets that pass through LAs every day and are equally in need of provision. Extending the approach to recognise the needs of drivers making these journeys, and accounting for the wide diversity of use cases for EVs, will lead to an EV infrastructure that not only works better for fleets, but for all users of public charging infrastructure.

Recommendations:

LAs should work with DNOs, CPOs, fleets, regional transport boards and other stakeholders to promote regular engagement and sharing of data.
This will create a clear picture of the charging network and its rollout across the region. Fleets and infrastructure investment are a key part of this picture.

LAs should endeavour to establish a 'whole organisation' view of charging requirements across their region.
This should ensure that sometimes disparate decisions about 'active travel' vs electrification of fleet all drive towards the same set of objectives.

Removing the barriers to access

The consensus across fleets was that more needed to be done to ensure access for the full range of vehicles. Van users frequently stressed the lack of suitable charging spaces, reflecting on the fact that they need larger spots, adequate surrounding space and to be able to fit in spaces alongside other vehicles. This was particularly emphasised in residential areas where charging bays have been typically constructed with cars in mind.

But expectations around access were not limited to vehicle size. Other key concerns included:

Security - Private fleets frequently referenced the enhanced security need of their vehicles which contained specialist equipment, meaning that they could not access chargers in poorly lit locations.

Busy locations - Fleets that operated in central locations flagged that access to busy areas such as high streets was particularly hard to navigate and therefore charging infrastructure was infrequently installed there, despite need.

Restricted mobility - Fleets servicing those with restricted mobility stressed the need to provide adequate space for

those vehicles and associated charging, or risk limiting disabled people's ability to transition.

This set of considerations were perceived as essential if the roll-out of EVs were to be expanded consistently beyond the model of some personal car use and easily addressed through a clearer national framework and a more consistent approach to decisions around installation.

Recommendations:

LAs should work with DNOs, CPOs, fleets, regional transport boards and other stakeholders to promote regular engagement and sharing of data. This will create a clear picture of the charging network and its rollout across the region. Fleets and infrastructure investment are a key part of this picture.

Government should create incentives for CPOs to introduce roaming solutions ahead of the regulatory deadline. The legal deadline for CPOs to develop roaming solutions will not come into force for over two years and fleet are still reporting complex reimbursement requirements.

Conclusion

In the race to decarbonise it is chargepoints that will deliver the confidence and capability to deliver zero emission road transport for all. Installing charging infrastructure can be a complicated, expensive and time-consuming business, so we need to get it right first time.

Fleets represent a particular challenge because they are moving at pace and have a hugely varied range of EV use cases. This guide provides an essential insight into the fleet world, its diverse constituents and the early infrastructure challenges they are facing.

The BVRLA looks forward to working with local authorities and other stakeholders in ensuring a fast and effective roll-out of fleet-friendly charging infrastructure across the UK.

Glossary of Terms

CCA - Civil Aviation Authority

CPO - Charge point operators

BEV - Battery electric vehicle

DfT - Department for Transport

DNO - Distribution network operators

ENA - Energy Networks Association

EV - Electric vehicle

HGV - Heavy goods vehicle

ICE - Internal combustion engine

LA - Local Authority

LEVI - Local EV Infrastructure Fund

Ofgem - Office of Gas and Electricity Markets

OZEV - Office for Zero Emissions Vehicles

OEM - Original equipment manufacturer (car and van makers)

OSRC - On-Street Residential Chargepoint Scheme

SLA - Service level agreement

SME - Small and medium-sized enterprises

ZERFT - Zero Emission Road Freight Trials

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