

# London's 2030 electric vehicle infrastructure strategy

Executive summary December 2021

MAYOR OF LONDON



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# Overview

This strategy sets out our vision, addresses recent trends and policy changes, estimates the infrastructure needs to 2030 and considers how this could be delivered. It outlines how far we have come in removing the barriers to implementing electric vehicle (EV) infrastructure and explores how the private and public sector can do more. This is the executive summary of London's 2030 electric vehicle infrastructure strategy.

With the phase out of petrol and diesel cars and vans by 2030, along with other influences, we must ensure that infrastructure delivery keeps up with demand. As we move forward, we are targeting the needs of key user groups, who typically make high-mileage trips while performing an essential role, while encouraging everyone to switch to zero-emission transport.

## Leading the way

London continues to lead the way in the electric revolution, with more than 8,600 public charging points installed across the Capital, a third of the UK's total and an 85 per cent increase since 2019. London also has western Europe's largest zero-emission bus fleet, emissions-based road user charging and the strictest taxi and private hire licensing regulations for vehicle emissions, all backed by strong policies to encourage people to make the switch.

## New forecasts

New modelling indicates that in the most likely scenario, where there is increased use of rapid, on-the-go charging, London will need around 40,000 to 60,000 charge points

by 2030, of which up to 4,000 will be rapids. The proportion of EVs this infrastructure would support could result a reduction in carbon dioxide emissions of between 1.5 and 2.6 million tonnes per year by 2030.

## Unlocking public sector land

Initial estimates show public sector land could accommodate a quarter of the 4,000 rapid charge points London may need by 2030. Our key commitment addresses one of the main barriers to charge point implementation, which is the availability of suitable land. Together with the Mayor, we are committed to unlocking GLA Group and other public sector land in prime locations to accommodate the infrastructure needed.

## Key asks for Government

Government funding has been vital in recent years in enabling London to meet the demand for EV charging. Although we anticipate most of London's charge points by 2030 will be delivered by the private sector, London will still need ongoing funding to help maintain consumer confidence and accelerate the switch.

## Driving the EV revolution

The commitments in this document will support the transition to EVs, initially in London, but also across the UK as London leads the way with new approaches and new policies. London's investment in EVs is already generating good quality jobs across the UK, whether it's electric buses in Yorkshire or electric taxis in Coventry.

This strategy is a strong signal of London's commitment to decarbonising the transport network over the next decade.

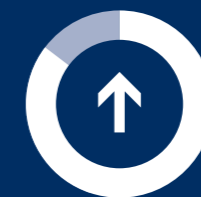


Public sector land could host a quarter of the rapids needed by 2030



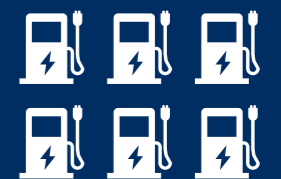
**2.6 million**

tonnes of carbon dioxide emissions could be saved per year by 2030 through switching to EVs



**85%**

increase in the number of EV charge points, compared to 2019



**60,000**

charge points could be needed in London by 2030, including up to 4,000 rapids

# Background

Our Electric vehicle infrastructure delivery plan, steered by the Mayor's EV Infrastructure Taskforce and published in 2019, identified how the public and private sectors could work together to ensure London has the right type and amount of charging infrastructure to serve London's needs to 2025.

Since the 2019 delivery plan, we have listened to the issues that road users have expressed about the difficulties with switching to EVs and user experience of EV charging. Taking this into account, as well as recent trends and policy changes, this strategy looks forward to 2030 and provides a comprehensive overview of recent industry developments. It also updates our understanding of typical user requirements as the transition to EVs accelerates beyond early adopters. While this strategy focuses on key users, it presents many commitments to help all user groups, so will contribute to the transition to zero carbon for all Londoners. The strategy also proposes our approach to working with the wider public sector and private sector, and sets out what is needed to ensure sufficient levels of EV infrastructure in London by 2030.

This is an essential part of meeting our climate change and air quality objectives and achieving the Mayor's ambition for the Capital to be a net zero-carbon city by 2030. While this is not a programme of delivery, we have identified our commitments to enable the wider industry to help ensure London has the necessary charging infrastructure it requires.

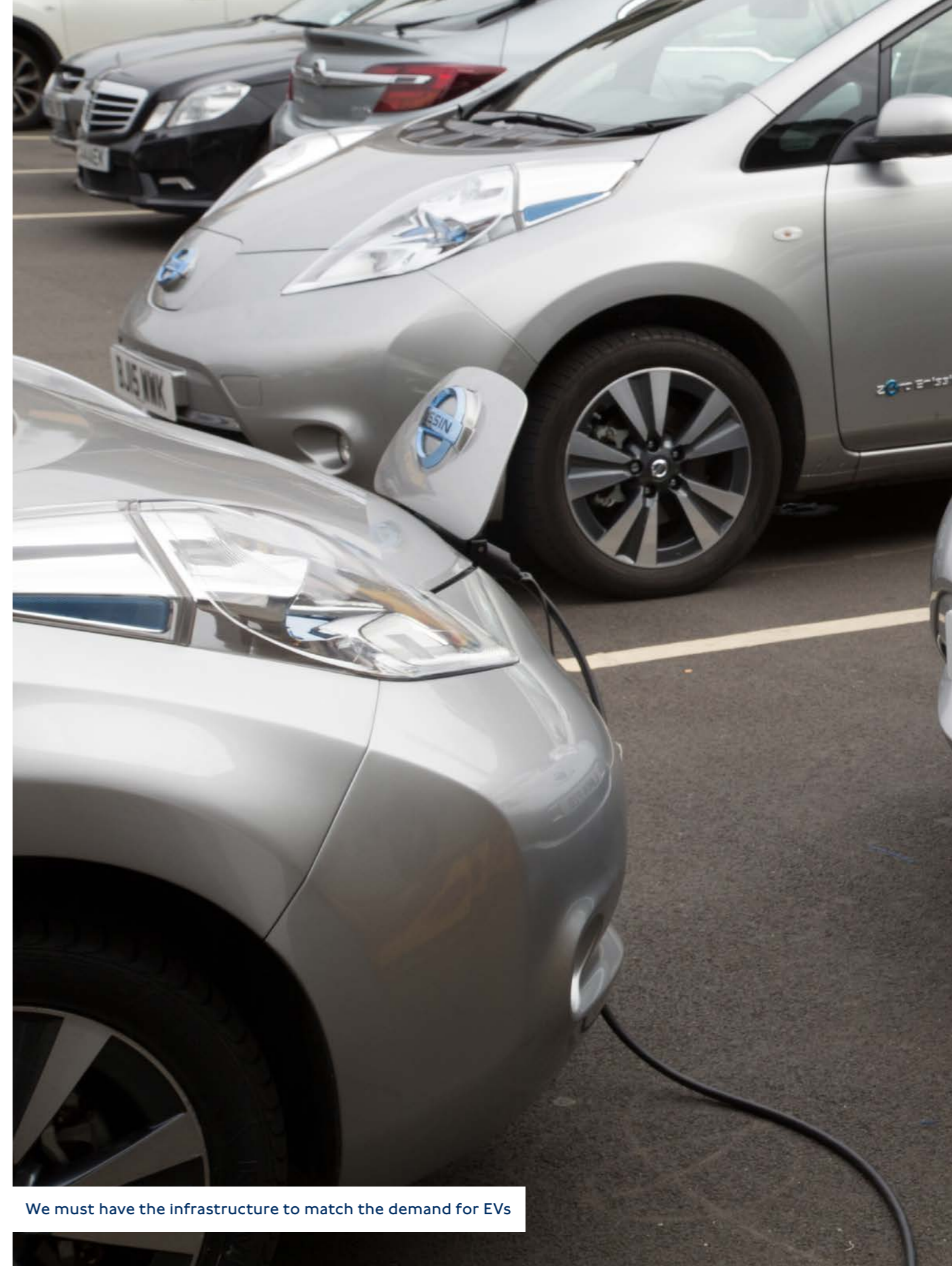
The scope of this strategy is limited to users of similar types of EV infrastructure. This includes light-duty vehicles, such as cars and vans, and excludes heavy commercial vehicles, such as heavy goods vehicles, buses and coaches. Heavy commercial vehicles, in addition to needing more space to park during charging, will require higher power levels. It also excludes lighter electric-powered two-wheelers, e-scooters and e-bikes, as these will not typically be using the same kind of public charging infrastructure.

### London continues to lead the way

The number of EVs is increasing rapidly, with one in eight new cars registered in London in 2020 being electric, which includes battery and plug-in hybrid EVs, compared to one in 16 in 2019. It is essential that we support this growth with a world-class infrastructure network.

Much has been achieved over the past few years, and there are now more than 8,600 publicly accessible charge points in London, delivered through both the public and private sectors. London's infrastructure now accounts for around a third of the UK's total charge points, with the number of EV charge points increasing by 85 per cent between 2019 and 2021.

London has been a world leader in the shift to electric vehicles, as stated by the International Council on Clean Transportation. This has been achieved through the Mayor's strong policies, including the world's first Ultra Low Emission Zone and vehicle scrappage



We must have the infrastructure to match the demand for EVs

schemes that incentivise the switch to cleaner vehicles, including electric. We also set ambitious electric bus targets that have resulted in Western Europe's largest fleet of zero-emission buses. We have the strictest taxi and private hire licensing regulations for vehicle emissions, which have been supported by taxi delicensing payments and grants for those switching to zero-emission capable taxis, with a third of our taxi fleet now driving these vehicles. Nationally, there have been financial incentives for purchasing EVs and an announcement to phase out the sale of petrol and diesel cars and vans by 2030.

Through this strategy, we will ensure that London continues to lead the way. While we have the infrastructure in place to support current levels of electric vehicle use, both London and national policies are expected to lead to higher than previously expected levels by 2030 and the infrastructure must be there to support this demand. Our strategy sets out what London can do using electrification to support the Mayor's ambition of becoming a net zero-carbon city by 2030, and the roles and responsibilities of all stakeholders, including the GLA and ourselves in facilitating this.

### The need for a London-wide EV strategy

The 2019 delivery plan forecast how many charge points would be needed by 2025 and indicated that there would need to be a shift from public sector to private sector delivery. Almost two thirds of the slow-to-fast charge points and around half of the rapid charging points in London have been delivered by the public sector. Even before the coronavirus pandemic struck, private sector investment in infrastructure roll-out was less than originally expected.

The Government has since introduced more ambitious policies to encourage the switch to cleaner and greener vehicles. These policies should be considered in the context of the Mayor's Transport Strategy, which has sustainable travel at its heart. Other Mayoral priorities, which are shared by other strategies such as the London Environment Strategy, include improving air quality and reducing carbon emissions.

The EV industry is rapidly evolving, both in terms of vehicle and infrastructure trends, as well as user behaviour. In the full strategy, we aim to demystify some of the main myths about EVs, which include the driving range, production of carbon emissions compared to petrol or diesel vehicles, and power needs.

This EV infrastructure strategy updates forecasts for London's charging needs up to 2025 and 2030, and sets out how the public and private sectors can further support the delivery of EV infrastructure in London. It also outlines what further government support and funding is required and what other stakeholders in the private sector can do to support the EV rollout.



**566**

zero-emission buses in our fleet



**4,791**

active zero-emission capable taxis



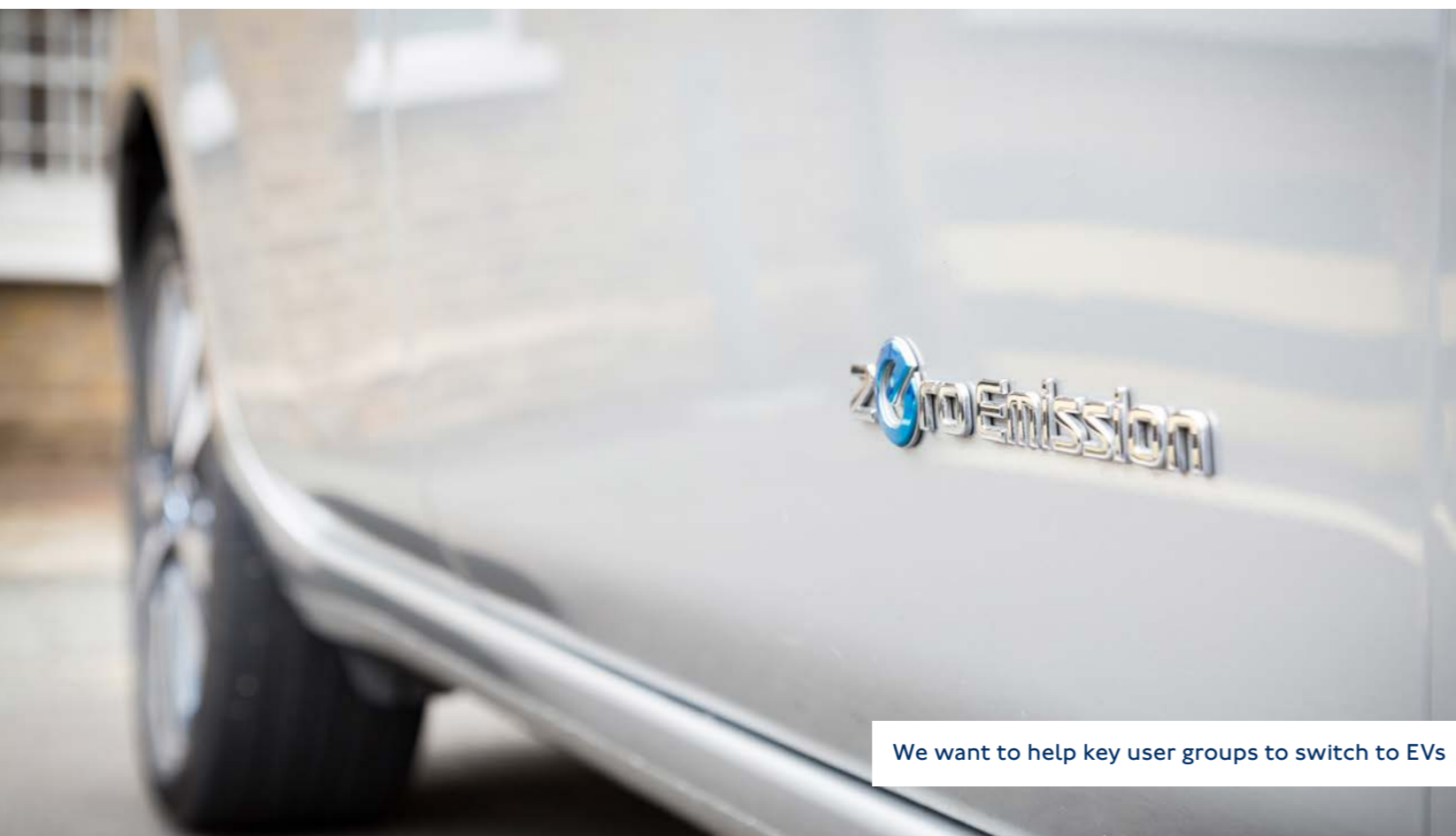
**44%**

reduction in nitrogen dioxide concentrations within the Ultra Low Emission Zone from 2017 to 2020



**15,000+**

first-time registrations of plug-in vehicles in London in 2020



We want to help key user groups to switch to EVs

# Electric vehicle infrastructure in London



## May 2018

The Mayor establishes the world's first electric vehicle infrastructure taskforce



## June 2019

The London electric vehicle infrastructure delivery plan is published



## December 2019

Stratford charging hub opens in east London and we publish guidance on installing charge points



## July 2020

The EV infrastructure coordination function, which is led by London Councils, launches



## November 2020

The London electric vehicle infrastructure delivery plan: one year on report published



## December 2020

We meet our target for installing 300 rapid charging points



## August 2021

Glass Yard charging hub opens in Greenwich



## Spring 2022

Baynard House charging hub due to open in the City of London

# Setting the vision

The Mayor's Transport Strategy sets out ambitious targets for trips to be made by sustainable modes, while predicting there will still be a need for some car and freight traffic to remain. For those remaining necessary trips, sufficient infrastructure will be required to enable them to be made by the cleanest possible vehicles.

It is also essential, however, that more widespread adoption of EVs does not undermine efforts to increase walking, cycling and use of public transport. Our strategy therefore focuses on the needs of key EV user groups and how we can support their transition. Key users have been identified as those making high-mileage trips performing an essential role, including taxis and private hire drivers, as well as other commercial vehicles. Not everyone will be able to walk, cycle or use public transport for all or any of their necessary trips, so it is important to ensure these trips can also be made by EVs, with appropriate access to charge points.

Our overarching vision will be realised through key principles, which fall into six thematic areas:

## Environment

High quality, ethical and sustainable charging infrastructure that drives emission reductions and is resilient to climate change.

## Sustainable mode shift

Delivery of EV charging should consider the type and location of infrastructure to ensure it does not incentivise additional car use.

## Healthy Streets

Our EV charging should complement our Healthy Streets approach and support Vision Zero.

## Accessibility

The EV infrastructure should be physically accessible, available, easy to use and should not impede or constrain people's movements on the footway.

## Social inclusion

EV infrastructure should be affordable to use and accessible to all.

## Commercial viability

We must ensure we create the right conditions for a self-sustaining charging market.

## Our electric vehicle infrastructure vision

Supporting a net-zero carbon target for London by 2030, and better air quality for all, the London EV infrastructure strategy seeks to accelerate the transition to zero-emission vehicles by setting out the requirements for the provision of infrastructure, focusing on essential trips.

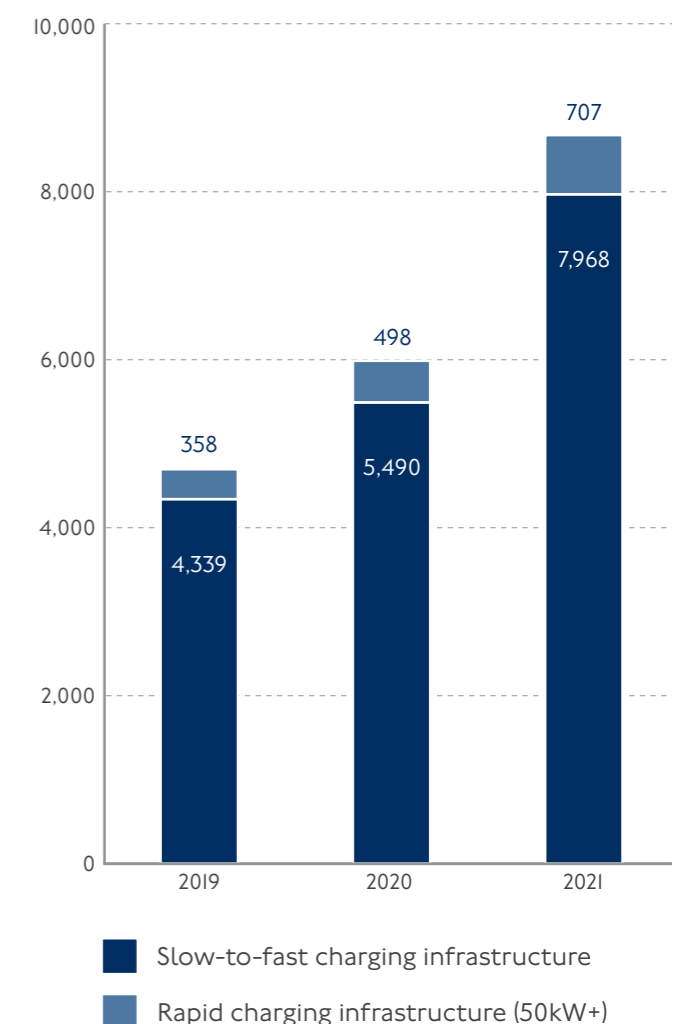
## Removing barriers to delivery

The amount of charging infrastructure in London has grown considerably since we published the delivery plan, with significant investment from the public sector. By November 2021, London boroughs had installed around 4,800 slow-to-fast charge points, and we met our target of 300 rapid charge points being installed by the end of 2020. The delivery plan set out the need for five flagship rapid hubs, one in each sub-region, by 2025. A hub was defined as having a minimum of six rapid, or faster, chargers enabling six or more vehicles to be charged simultaneously. The public sector has supported the opening of two sites in Stratford and Woolwich, with Baynard House in central London expected by spring 2022. The private sector has also delivered hub sites at Heathrow, Croydon and on New Kent Road. Further sites are being developed, some of which may also be supported by the public sector. Delivery is accelerating, but must accelerate faster.

Our strategy assesses the lessons learnt from recent delivery of public charging points and identifies future opportunities. These include the need for a new and more flexible procurement model, for updated guidance documents in line with advances in technology and for enhanced mapping to identify viable sites. Working with private sector partners, we have explored the barriers to further delivery and identified how we, together with the GLA and the London boroughs, could help unlock them going forward. The barrier of available and suitable land has been cited as one of the most prominent issues in London, but not the only barrier.

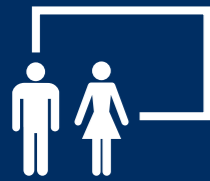
## London's charging devices by type (total number)

Source: Zap-Map, 2021



## Public sector support

We see the public sector supporting through:



Facilitation



Strategic oversight



Land access



Financing

From recent engagement with stakeholders, we have built on the core challenges identified in the 2019 delivery plan. The following outlines our progress against key barriers and provides an update on how these challenges have been addressed.

Challenge identified in 2019 delivery plan	2021 update
<b>Land and energy</b>	
Ability to secure suitable charge point locations given competing demands and London's limited land availability.	New commitments to unlock suitable land in the right place and right condition.
Long lead times and complexity of installation.	London Councils set up a Coordination Function, and further guidance has been issued.
Cost of energy grid upgrades.	UK Power Networks produced online mapping as per 2019 delivery plan commitment. Further refinement of heat mapping would help eliminate unviable sites and improve efficiency. Further engagement with central Government to ensure that grid upgrade costs are fairly distributed.
<b>Investment uncertainty</b>	
Lack of confidence in the availability of convenient charge points, such as perception that all are already in use or broken down, or not in convenient locations.	There are 85 per cent more charge points than in November 2019. Further data analysis has been done to indicate where optimum locations are, which are reported in the full strategy document and available to borough officers on London DataStore. Renewed commitment to ensure high service levels are maintained for all our delivered charge points.
Unfamiliarity with the experience of charging – perception that it is confusing, complicated and inconvenient.	New commitment to improve access to real-time availability and location of charge points to improve user experience.
<b>Operational/users</b>	
Uncertainty about what type of charge point needed, concerns about obsolescence – reluctance to invest until there is more confidence in the charging model.	Guidance on future proofing charge points issued by BEAMA. Further analysis done to refine understanding of appropriate charge point types. New commitment to provide demand data and evidence base to support private sector investment.



Good progress has been made to overcome barriers to EV infrastructure



# Our analysis

## Updated forecasts for London's EV infrastructure needs

	Scenario with majority slow to fast charging, but more drivers also favour rapid, on-the-move public charging				Scenario where drivers favour local, on-street, slower charging, with lower use of rapids			
	2019 delivery plan forecast		2021 new forecast		2019 delivery plan forecast		2021 new forecast	
	Slow to fast	Rapid (50kW)	Slow to fast	Rapid*	Slow to fast	Rapid (50kW)	Slow to fast	Rapid*
2025	20,000 – 34,000	2,500 – 4,100	18,500 – 34,500	1,600 – 2,600	28,000 – 49,000	1,400 – 2,300	26,000 – 49,500	1,100 – 1,600
2030	N/A	N/A	40,000 – 55,000	3,000 – 3,900	N/A	N/A	60,000 – 90,000	1,700 – 2,100

We have updated our modelling to reflect wider technological changes, recent user trends and new policies that will affect the rate at which people switch to EVs. This has been used to update our existing estimates of charge points needed within Greater London for 2025, as well as providing an indicative outlook to 2030. By 2025, the forecasts suggest there could be between 0.3 and 0.6 million EVs in London, equivalent to between nine per cent and 21 per cent of London's total car and van fleet. By 2030, there could be between one and 1.4 million EVs, which is between 34 per cent and 49 per cent of London's total car and van fleet.

While these estimates are based on in-depth modelling, incorporating up-to-date industry data and insights, there is still a high degree of uncertainty. As such, we have used scenarios to cater for different trajectories of EV sales and charging behaviours. We will continue to update our forecasting to account for the greater level

of uncertainty that emerges as we look further ahead and to account for new trends.

The first scenario assumes that there is a preference for faster public charging, with more on-the-go, top-up charging taking place, as well as a continued mix of speeds, with most still wanting slow chargers near their home. For those using faster charging, such as rapids and ultra rapids, there will be more similarities to current petrol station refuelling behaviour. The second scenario assumes that, although there will be some faster charging, there will be a strong preference for more on-street slower, residential-based charging, as well as a slightly higher proportion of private, at home charging on driveways.

Our modelling forecasts are projections and should not be treated as targets. They give a sense of scale of what could be needed and are based on many variables, principally the

speed that Londoners are expected to switch to EVs. The updated figures for 2025 do not vary significantly from those predicted in 2019. This is due to the high proportion of public charging needed for private hire demand, where some operators made very ambitious commitments to have an electric fleet from 2025 or even as early as 2023. These remain in place, so the phase-out of petrol and diesel vehicles has a much higher impact on uptake by 2030.

Another key factor in the differences between the 2019 forecast for 2025 relates to the assumptions made around rapid charging speed. Following extensive engagement with the industry and our assessment of technological advances, we have updated our assumptions to reflect a theoretical average speed of 100kWh in the future, assuming a split between continued roll out of 50kW and increasing numbers of 150kW charge points.

There is a significant difference in the overall numbers of devices needed between the two user preference scenarios, particularly by 2030. In the scenario where faster, on-the-go charging is favoured, we expect to need around 40,000 to 55,000 slow-to-fast charge points, and 3,000 to 3,900 rapid charge points by 2030. Where slower charging is significantly favoured, we could need between 60,000 to 90,000 slow-to-fast charge points, and 1,700 to 2,100 rapid charge points by 2030.

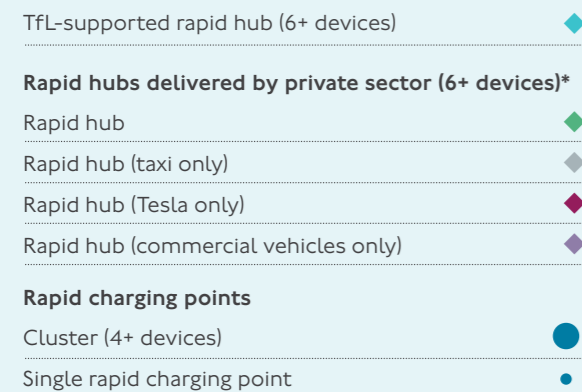
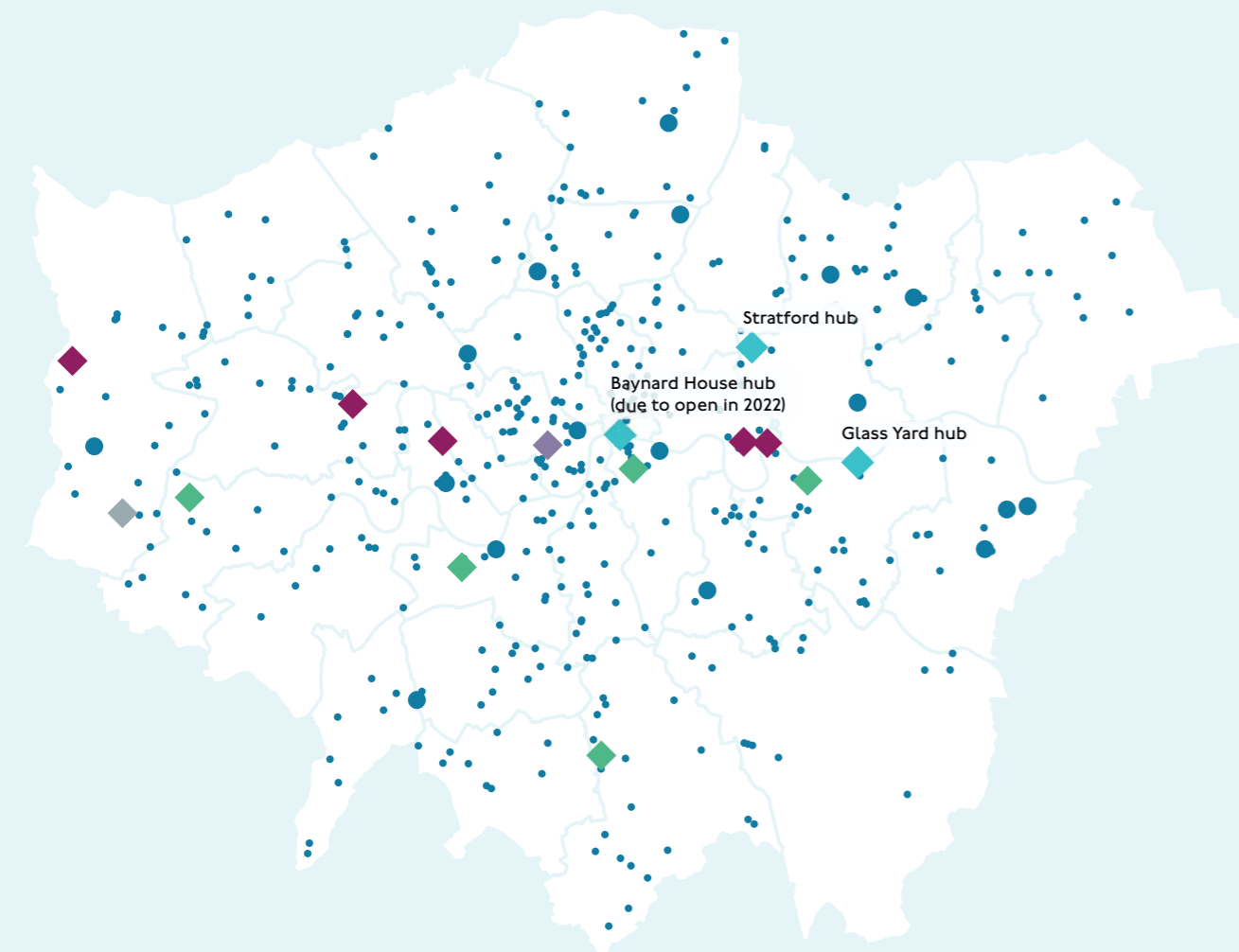
The first scenario is more desirable and aligned with our vision and principles. The focus of this strategy is to support key user groups who typically do higher mileage, and who are more likely to need top-up, on-the-go charging. Faster charging is more convenient and efficient. Technology is developing at pace and users can be offered a similar level of convenience to refuelling a petrol or diesel vehicle today. This scenario still includes a sizeable proportion of slower charging to accommodate the needs of lower mileage users or those who are more price sensitive. The forecasts projected to 2030 in the second scenario would not deliver so well against our vision and principles, owing to the implications of having so many devices along our streets on streetscape, as well as the competing demands on the kerbside. In addition, this scenario would require higher levels of public sector funding given the business case for slower chargers tends to be considerably lower.

The delivery of infrastructure to support this scale of EV usage could result in around 46 per cent of the overall distance travelled by cars in London being by electric car. The proportion of EVs in the vehicle stock could reduce carbon dioxide emissions by between 1.5 million and 2.6 million tonnes per year by 2030. With much of the early shift to EVs expected to come from London's highest mileage drivers, this could represent between 40 and 84 per cent of London's total transport carbon emissions from cars.

\* Assumes speed of rapid chargers delivered from 2021 onwards is 100kW as a theoretical average

## Rapid charging infrastructure in London

Source: Zap-Map, November 2021



\* Rapid charge points are 50kW or faster

### Rapid charging points

The 2019 delivery plan advocated the advantages of rapid charge point hubs and set out an ambition for a rapid hub in every sub region of London by 2025. The public sector has supported on hubs opening at Glass Yard in south London and Stratford in east London, and will be opening one at Baynard House in central London in 2022.

The private sector has delivered publicly accessible hubs near Heathrow on the M4, Croydon and New Kent Road, with a number of dedicated hubs also delivered to serve key user groups such as taxis and commercial vehicles. There is still no hub in north London, although rapid charge point coverage, including rapid clusters with up to four points, is increasing. A hub in north London remains a priority.

To meet demand, we need many more rapid chargers. These should continue to be delivered in central London, and town centres, including in outer London, as well as strategic routes such as A-roads.

The public sector has delivered around half of London's rapid chargers, though private sector delivery is now accelerating. Of all the rapid chargers forecast to be needed in London by 2025, we expect around 20 to 30 per cent could be delivered with support from the public sector, equivalent to between 180 and 570 rapid charge points. This support could either be through direct delivery or by facilitating others, such as providing land. By 2030, we are aiming for little or no public sector funding being needed, as higher usage will make it more viable for commercial operators.

### Slow-to-fast charge points

A good geographic spread of slow-to-fast charge points will be needed, particularly where priority users, such as private hire drivers, will need them. There were ambitious commitments set by private hire operators to switch to EVs by 2025.

There are large gaps in the slow-to-fast public infrastructure network in residential areas for each priority group. Further data will be sought to supplement vehicle registration data to ensure infrastructure is delivered where it is needed most. Investment should be focused in identified locations, detailed in the full strategy, to support these groups.

We must reduce the impact of charge points on the streetscape, to address accessibility concerns as well as avoid street clutter and redundant apparatus. Discreet, inclusively designed solutions, such as lamppost chargers and pop-up low-profile devices, are helping to achieve this.

The public sector has funded around 60 per cent of the slow-to-fast charging infrastructure installed. As usage increases and the infrastructure becomes more viable, we expect the private sector to deliver more charge points, so that by 2025, at least 50 per cent would be delivered with primarily private sector funding. Public sector delivery will depend on funding and contracts with operators that give boroughs a fair deal. By 2030, we anticipate most would be funded by the private sector, but certain locations may still need public sector support. All the charge points on borough land will continue to require public sector involvement.

# Our commitments

## Our keystone commitment to unlock GLA Group land for EV charging

Unlocking GLA group land and repurposing it for EV charging will make the biggest difference to delivery that we, as the public sector, can make. This will involve:

### Assessing all available GLA Group land

We will look for suitable land to support the delivery of a network of rapid charge points and hubs across London. Initial estimates indicate up to 1,000 rapids could be accommodated on GLA Group land.

### A clear focus on high mileage, essential road users

This will maximise emissions savings and support the goals of the Mayor's transport and environment strategies, while considering the need to encourage all road users to switch to zero-emission vehicles.

### Providing greater support to boroughs in the future

London's boroughs will be encouraged to continue and enhance delivery of residential slow-to-fast charge points on their land, where users can access lower cost energy for residential slow-to-fast charging, even if they don't have access to home charging. This will help make the procurement and delivery process more streamlined and efficient.

### Implementing high-quality operational standards

We will look at the procurement process to improve the user experience, fair pricing and longevity of the charging infrastructure.

### Working with the private sector

This will involve technical, commercial and, where possible, financial support to deliver public infrastructure.

### A separate workstream to develop our own hubs

Our Commercial Development team is pursuing opportunities to roll out our own rapid charging hubs, using available land. These hubs will have environmental, social and economic benefits, providing significant ongoing revenue while supporting the transition to electrification. Planning, legal and technical due diligence is being done to assess ten initial sites, owned by us and the boroughs, for their suitability. It is intended that several hubs will come forward for development in 2022.

## Commitments to support all user groups

We have identified the following ways to support the needs of all EV users:

### Developing a real-time and open application platform interface

This bespoke application platform interface (API) would cover all charge points across London. We will improve the user experience and provide more reliable information on individual charge points. Subject to an initial feasibility study and Government funding, this will be initiated in 2022.

### Support the delivery of shared charging facilities

These can be delivered between third parties, benefiting key user groups. We will pioneer the first bus garage shared infrastructure, which, subject to Government funding, will get under way in 2022.



We need to ensure access to charge points across London

## Supporting the industry

To support the EV industry, we will:

### **Seek a partner to set up an EV Ethics and Sustainability Committee**

This committee will engage with others, such as international cities, governments, trade bodies and non-government organisations to identify collective international action to address the ethics and sustainability of the supply chain for EVs.

### **Provide demand data and evidence base**

This will support private sector investment in charging infrastructure, via the Charge Point Operators Forum, and potentially to wider audiences depending on the sensitivity of the data.

### **Work with energy distributors**

Together with energy distributors (DNOs), we will identify localised grid constraints, so they can get Government support to fund upgrades, as required.

### **Explore green financing opportunities**

Work with the private sector to find the best financing solutions to support the roll out of EV infrastructure.

### **Support charge point operators**

We will support those who want to streamline the verification of driver licence status, improving efficiencies when applying preferential charging rates to key users.

### **Update EV infrastructure forecasts**

London level forecasts will be updated every two to three years and we will support boroughs with granular level forecasts, starting in 2022.

## Supporting key user groups

### **Taxis**

#### **Find technical solutions to enforce taxi dedicated bays**

Working with charge point operators, these solutions will improve enforcement of taxi-dedicated bays. This work has already begun.

#### **Continue to deliver taxi-dedicated bays**

These will be in locations where taxi drivers frequently work, subject to funding. As demand grows in other key sectors, we will also explore dynamic solutions to maximise utilisation

#### **Continue to explore innovative charging options**

Including wireless charging on taxi ranks.

### **Private Hire Vehicles**

#### **Encourage delivery of slow-to-fast charge points where drivers live**

These will be focused in areas with a high proportion of private hire drivers.

#### **Support the delivery of rapid charging where drivers live and work**

We will focus on rapid charging where private hire drivers live and work, such as town centres across the city.

#### **Instigate a regular forum**

From the end of 2021, this forum between charge point operators and private hire representatives will help solve specific issues.

### **Light goods vehicles**

#### **Establish a commercial fleet database**

This will assist with future planning and investment in infrastructure to support commercial fleet users, such as delivery companies, to switch to EVs. Subject to funding, this will begin from 2022.

#### **Set up the London EV Business Leader's forum**

Working with private fleets and commercial fleet operators to address specific issues, including their transition to EVs and how they support the delivery of London's charging needs. This will be achieved from 2022.

### **Emergency service and public sector fleet vehicles**

#### **Support the transition**

We will work with emergency services and public fleets, such as boroughs, via the GLA fleet forum to support their transition to EVs. Building on the joint EV infrastructure study, we will coordinate further EV charge point procurement, market engagement and explore joint funding opportunities.

#### **Dedicated charge point bay**

We will look at the feasibility of a dedicated bay for emergency services at one of our rapid charging points, with feasibility work starting in 2022.

### **Car clubs**

#### **Encourage infrastructure in active car club locations**

By focusing in areas where active car clubs operate, we will be able to support the electrification of these vehicles.

#### **Work with operators and car clubs to explore dynamic solutions**

Working together, we will explore how car clubs can make optimal use of the infrastructure, such as prioritised overnight rapid charging.

# Next steps, financing and further support

This document presents an initial summary of our findings and commitments to further support delivery of EV infrastructure in London. We are keen to seek feedback and discuss our findings and commitments with stakeholders over the coming months, and will publish the full strategy document at the end of the year.

Government funding has been vital in enabling London to meet the demand for charging infrastructure and supporting the recent rise in consumer confidence in EVs. While we urge the private sector to also respond to this demand, with continued support from the GLA, London Councils and TfL, London will still need ongoing funding from Government to help maintain consumer confidence and accelerate the switch to electric vehicles. Continued Government funding will be essential to help address gaps in the charging network and ensure provision is equal across London.

## Successor funding scheme

We would like to see a national successor funding scheme, to support the roll out of on-street and rapid charge points, which should be available for London to bid for. It would follow from the success of Go Ultra Low City Scheme (GULCS) and On-Street Residential Charge point Scheme (ORCS).

With an estimate of £5,000 for an individual slow-fast charge point and around £85,000 on average to deliver 50kW rapid charge points or 150kW ultra rapid charge

points, We estimate that an investment of between £15m and £48m would deliver between 180 and 570 additional rapid charge points, which is 20 to 30 per cent of London's future rapid charging needs by 2025. Investment of £26 and £66m would deliver between 5,250 and 13,250 additional slow-to-fast charge points, which is around half of London's future needs by 2025.

The percentages we expect to be delivered by the public sector have been estimated from our current understanding of the market and extensive stakeholder engagement, enabling us to set a clear vision for the future.

## Real-time information system

The lack of open data for charge points is one of the key challenges that EV drivers face. Government funding of up to £1m would enable us to start developing a world-leading real-time information system for EV charge points, which could be scaled to operate at a national level.

## Shared access

We are closer to maximising the use of charge points by creating shared access to infrastructure for public and commercial fleets, having identified potential locations, including a bus garage. We are seeking £20m in Government funding, via the Comprehensive Spending Review, to deliver shared infrastructure at bus garages in London and pioneer this new business model.

## Commercial fleet database

There is a clear need to support the uptake of plug-in commercial vehicles. The charging needs of these fleets is less understood, owing to a number of reasons including vehicle registration data being less reflective of where these vehicles operate and where charging infrastructure will be needed, so the first step will be to gather data. We are seeking Government funding of up to £1m to develop a pilot database of commercial fleet activity and set the context for a scalable national version to be developed.



Government funding and support will be vital if London is to meet the demand for EV charging infrastructure



There has been significant investment in EV infrastructure



Promoting the use of EVs would support our Healthy Streets approach

## Realising our vision - our role

Since we published the 2019 delivery plan, the delivery of EV infrastructure in London is well ahead of demand estimates, but we can see how demand is now rising rapidly. Our strategy considers what might be needed and what more can be done to help people transition to zero-emission vehicles, ensuring all essential car trips can be made by EVs, with access to charge points. To achieve this, we will continue to work closely with the GLA, London boroughs, London Councils and across the industry, following our overarching vision and our key principles.

### Environment

By supporting infrastructure delivery, we can enable the switch to EVs, which would reduce carbon emissions and improve air quality. We will address battery supply chain transparency, working with partners, such as Electronics Watch. We will set specifications that all EV infrastructure delivered through our frameworks must operate using renewable electricity. This can also be adopted by boroughs.

### Sustainable mode shift

We will prioritise essential road users' EV charging requirements, while also enabling other users who need to make essential trips by car to access a charge point, providing strategic vision and development of forecasting tools to support this.

### Healthy Streets

We will promote our guidance to ensure EV infrastructure aligns to our design principles. We will update our London electric vehicle charge point installation guidance to reflect feedback and new accessibility guidance.

### Accessibility

Working with Government, we will support a national-level solution for roaming payments and for a switch to pence-per-kilowatt hour tariffs to ensure users know what they will be charged. This needs to be consistent with energy sector pricing for home charging.

Pay as you go options will be mandated on all publicly available EV infrastructure and contactless payment on all rapid charge points that are delivered through our frameworks. We will ensure these requirements can be adopted by boroughs.

### Social inclusion

Using available and suitable land, a consistent, fairly priced network of slow-to-fast and rapid charging infrastructure must be delivered across London.

The case for funding must be made for sites that, although less commercially viable, would bridge gaps in London's charge point network.

Working with the Government, we will support the lowering of VAT so that it is consistent between public charging points and home charging use.

### Commercial viability

We will support a strategic approach to site selection, providing data and analysis, to improve the business case for private investment. Using a flexible procurement model, we will vary the contract lengths delivered on GLA or our land to reflect the viability of the site, while also seeking a fair deal for us and boroughs.

