



**LEWISHAM'S ELECTRIC VEHICLE INFRASTRUCTURE
IMPLEMENTATION PLAN 2023-2026**



Foreword

In November 2020, the Prime Minister put the UK on a fast course to decarbonise road transport, announcing that sales of all new petrol and diesel cars and vans would end in 2030. Thanks to the huge investment now pouring into battery technology, EVs are getting cheaper to buy and more efficient to run. Owning and running an EV has never been easier and we have seen a major increase in EV use. In Lewisham we have installed EV charge points to an extent that is over double the national average with the majority of borough households within a 500 metre walk of their nearest chargepoint. We are now focused on further developing a robust, fair and scalable charging network covering the entire borough.

In our borough, a quarter of the greenhouse gas emissions come from the vehicles on our roads. The council is committed to working with partners and the community to tackle climate change and switching the way we power our cars and vans is a critical component of this.

Many residents and businesses have already embraced electric vehicles, and we know that many more will be keen to do so over the coming years. We recognise that for everyone to make the switch, the right charging infrastructure will need to be available around the borough. We want to give as many people as possible the confidence to switch to an electric vehicle at the earliest opportunity, to decarbonise borough emissions as rapidly as we can. Providing chargepoints serves to accelerate the transition by demonstrating that driving electric is set to become a normal part of everyday life, as well as offering reassurance to non-users that they will be able to find chargepoints when they need them if they switch to electric.

This plan sets out how the Council will play its role in ensuring infrastructure is put in place, in readiness for the upcoming national bans on sales of new petrol and diesel vehicles and thereby create a greener Lewisham for the health of our residents and the future of our planet.



Councillor Louise Krupski
Cabinet Lead for Environment and Climate Action



Executive Summary

This is Lewisham's second Electric Vehicle Infrastructure (EVI) Implementation Plan. Since 2019 the council has successfully bid for Government grant funding and has now installed 120 chargepoints. There is a chargepoint for every ten electric vehicles (EVs) registered in Lewisham, which is better than double the national ratio.

This document sets out our approach to installing EVI from 2023-2026, including updated actions and targets. There is £36m of Local Electric Vehicle Infrastructure (LEVI) funding, available to London boroughs over this period, to install chargepoints. Our objectives remain largely unchanged from our initial strategy:

- **Objective 1:** Deliver appropriate infrastructure in the right locations by:
 - Focusing on high-mileage drivers (car clubs, taxis, vans etc).
 - Ensuring residential areas have sufficient chargepoints to support home charging.
 - Using land we manage to provide chargepoints in town centre locations and alongside main roads where good opportunities exist to do so.

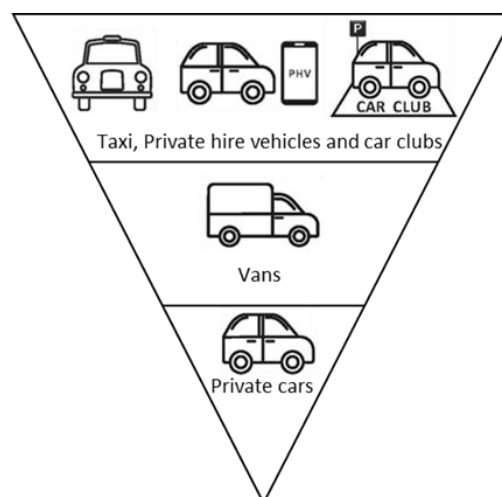


Figure 1: Our hierarchy of EVI provision will focus on high-mileage vehicles that can deliver the biggest reductions in pollution emissions.

- **Objective 2:** Make use of funding opportunities to provide and maintain EV chargepoints.
- **Objective 3:** Ensure the charging network remains fit for purpose, can cater for future expansion and is adaptable to emerging technologies.
- **Objective 4:** Encourage more sustainable travel, including EVs for any essential car trips, through supporting policy frameworks, initiatives and public engagement exercises, drawing on best practice from around the UK and beyond.

In our previous strategy we committed to have all households within a 500m walk of their nearest chargepoint. This is largely complete but 25 more chargepoints are needed to deliver this level of service across the borough. In 2023 we will apply for government grant funding from the On-street Residential Chargepoint Scheme (ORCS) and focus on achieving this commitment.

Government has also made available a new funding stream called LEVI and London has been awarded £36m to increase the pace of EVI delivery. During 2023 we will develop a business case, in partnership with other London boroughs to establish the best value commercial model on how EVI is installed from 2024 onwards. We anticipate appointing a supplier in the second quarter of 2024. They will deliver a minimum of 250 additional chargepoints, that serve households and businesses without access to off-street parking, by the second quarter of 2026.

Once all households are within 500m of their nearest chargepoint we will begin identifying and prioritising requests for chargepoints from high mileage drivers. New chargepoint locations will be decided based on these requests and usage data of existing chargepoints, with areas of high demand seeing greater supply of chargepoints.

Alongside the rollout of established technologies we will also pilot new technology that allows drivers to charge on-street using a chargepoint that connects to their domestic power supply. By the third quarter of 2025 we will have the results of this trial and may roll it out more widely as a solution.

In addition to installing chargepoints that facilitate drivers without access to off-street parking to charge close to home we will also evaluate what opportunities there are to install rapid and destination chargepoints on land the council manages. By the end of 2026 every district town centre in the borough will be served by a rapid chargepoint.

We will also seek funding opportunities to improve the delivery of EVI and have committed to produce Supplementary Planning Guidance that establishes what developers must contribute. This will assist in meeting targets for half our car club fleet to be EV by 2025 and ensuring that commercial vehicles can electrify.

The milestones for this implementation plan are set out below. The installation of home-chargers are in green, the installation of rapid and destination chargers in blue and other measures shown in orange.



Contents

Forward	Error! Bookmark not defined.
Executive Summary	1
Contents	5
1 Policy Context	7
1.1 Taking charge: the EV infrastructure strategy	7
1.2 London’s 2030 EV Infrastructure strategy & delivery plan	8
1.3 EV infrastructure at new developments:	9
1.4 Lewisham Council Policy	9
1.5 Transport Strategy & LIP	10
1.6 Air Quality Action Plan	11
2 EV Infrastructure	12
2.1 Types of chargepoints	12
2.2 Emerging technology	13
2.3 Understanding EV driver needs	14
3 Current & future EV infrastructure provision	17
3.1 Current EV Ownership	17
3.2 Current EV Infrastructure	19
3.3 Future Energy Demands	25
3.4 Forecast need for EV infrastructure	25
4 Action Plan	30
4.1 Objective 1	32
4.2 Objective 2	35
4.3 Objective 3	38
4.4 Objective 4	39
5 Appendices	41
5.1 Town centres in Lewisham	41
5.2 Appendix B: Lamp-column Chargepoint location guidance	41

1 Policy Context

The scope of this plan is the infrastructure required for electric cars, vans, and motorbikes. It is an update of the borough's low emission vehicle charging strategy which covered the period 2019-2022. This update incorporates the new national EV infrastructure strategy and associated LEVI funding.

1.1 Taking charge: the EV infrastructure strategy

The Government have set out their vision for EV infrastructure delivery up to 2030. It sets the expectation that the public sector will take the lead in providing chargepoints that enable long distance journeys and support households without off-street parking to switch to EV. Because EVs are often charged while parked, residents without off-street parking will be reliant on public charging infrastructure. By 2030, there is expected to be a minimum of around 300,000 chargepoints in the UK, and potentially up to 600,000¹. To support the delivery of greater scale in the rollout of infrastructure a £500m Local Electric Vehicle Infrastructure (LEVI) fund has been established. London has been allocated nearly £36m for the period 2022/23 – 2024/25².

There are two main reasons Lewisham supports the rollout of EV infrastructure: to reduce Greenhouse Gas (GHG) emissions that contribute to climate change and reduce emissions that impair local air quality. In 2019 the transport sector contributed 27% of the UK's total GHG emissions³, with road transport responsible for nearly all these emissions. The Climate Change Act 2008 set a mandatory GHG reduction target for the UK of 80% by 2050. This was amended in 2019 to 100%.

The Committee on Climate Change (CCC) was established to monitor and advise on the UK's progress, measured against legally binding five-year carbon budgets. The UK's sixth carbon budget, produced by the CCC has modelled a 'balanced pathway' scenario to achieve the GHG reduction target. In this scenario 43% of the UK car fleet needs to be EV by 2030. The UK government have announced a ban on the

¹ [UK electric vehicle infrastructure strategy - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/uk-electric-vehicle-infrastructure-strategy)

² [LEVI grant allocations](#)

³ DfT; [Transport and Environment Statistics 2021 Annual report](#)

sale of new vehicles wholly powered by petrol and diesel in 2030 as a measure to help realise this target.

With regards air quality the UK has legal limits on the permitted concentrations of specified pollutants. The main pollutants of concern, because there are instances where they breach legal limits, are Nitrogen Dioxide (NO₂) and Particulate Matter (PM). Petrol and diesel vehicles are a significant source of both. Because human health can be affected by both short-term, high-pollution episodes and by long-term exposure to lower levels of pollution⁴ monitoring covers both types. Where legal limits are breached local authorities must declare an Air Quality Management Area (AQMA). EV's produce no NO₂ and a reduced level of PM compared to petrol and diesel equivalents.

1.2 London's 2030 EV Infrastructure strategy & delivery plan

At the regional level Transport for London (TfL) have published two policy documents: London's 2030 EV infrastructure strategy and an EV Infrastructure delivery plan⁵. The strategy contains high level principles on how EV infrastructure should be delivered. These are reproduced in the table below.

Theme	Principle
Environment	High quality, ethical and sustainable charging infrastructure that drives emissions 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 incentivize 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.

Table 1: TfL EV infrastructure strategy principles

Both documents contain useful information on the needs of different user groups, forecasts of the required number of chargepoints and data on where households lack off-street parking. Analysis of the home addresses of taxi, private hire and van

⁴ [UK Clean Air Strategy 2019](#)

⁵ [London electric vehicle infrastructure delivery plan \(tfl.gov.uk\)](#)

drivers shows that there is not a particularly high concentration of any of these high mileage driver groups in Lewisham. TfL's EV infrastructure strategy also shows areas where private householders will have a higher dependency on public charging, based on their access to off-street parking. This is reproduced in section 5.1.

1.3 EV infrastructure at new developments:

Until the updated national building regulations came into effect in June 2022 standards for charging infrastructure at developments requiring planning permission in London was set by the London Plan. This planning policy document published by the Mayor of London requires that 20% of parking spaces on new developments had to have chargepoints fitted, and the remaining 80% of spaces have ducting provided so that chargepoints can be retrofitted without needing to dig up the car park (passive provision).

Part S of national building regulations now requires that each new residential dwelling which has associated parking must have a chargepoint provided, with a minimum of 7kW output. Renovations of 10 or more dwellings are also required to retrofit chargepoints and car parks at non-residential are also required to provide chargepoints. This national requirement removes any need for Lewisham to adopt planning policies requiring developers to install EV chargepoints.

1.4 Lewisham Council Policy

The image below shows selected Lewisham policies that feed into the development of the EV Implementation Plan. The EV Implementation Plan is directly subordinate to the Transport Strategy & LIP and is also informed by the Climate Emergency Action Plan, spatial planning policies and air quality policies.

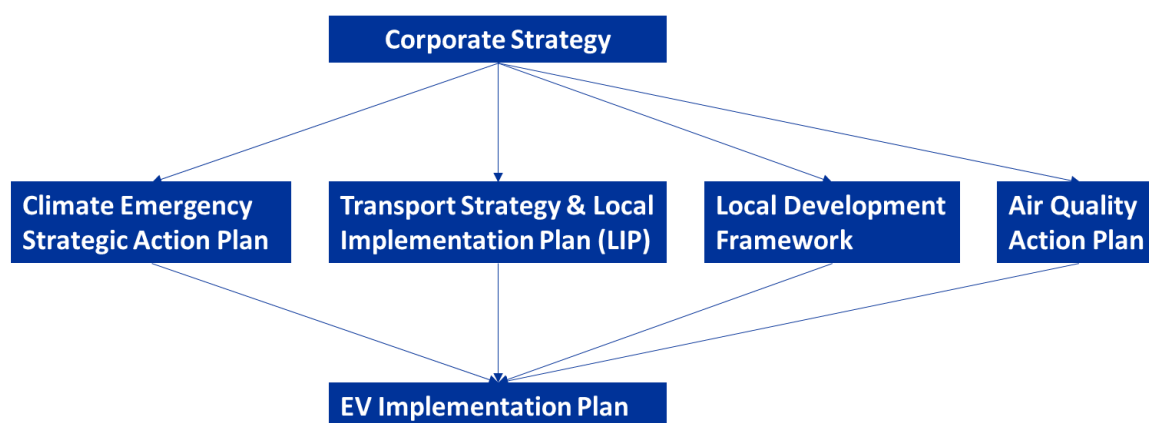


Figure 2: Relevant policy hierarchy informing the EV Implementation Plan

1.5 Transport Strategy & LIP

There are seven Mayoral Transport Strategy outcomes that the Transport Strategy & LIP seek to deliver. The transition to EVs can help deliver outcomes three and four;

- Outcome 3 - ‘Using London’s streets more efficiently’.
- Outcome 4 - ‘Making London’s streets clean and green’.

To measure progress against these two outcomes there are four LIP targets, reproduced in the table below.

LIP target	Measure	2019	2021 target	2041 Target
3a Reduce volume of traffic	Annual vehicle kilometers (in millions)	766	747	598 - 635
3b Reduce car ownership	Total cars owned by borough residents. Base year 2013/14 – 2015/16	79,792	75,100	67,800
4a Reduce CO2 emissions	Tonnes of CO2 emissions from road transport within the borough. Base year 2015/16	155,200	132,000	34,800
4b Reduce NOx emissions	Tonnes of NOx emissions from road transport within the borough. Base year 2013/16	610	200	30

Table 2: LIP targets concerning outcome 3, Using streets more efficiently and 4, making streets clean and green.

EV’s most important contribution to achieving the borough’s transport strategy outcomes is in cutting emissions from road transport. The way in which EV infrastructure is delivered can also help contribute to a reduction of private vehicle ownership and traffic on Lewisham’s streets. In practice this will mean prioritising support for shared transport, such as car clubs, ahead of privately owned vehicles. The LIP recognises that while EVs provide a significant improvement to traditional

motorised traffic, widespread private ownership and use would result in continued congestion and would work against some Mayoral Transport Strategy aims.

1.6 Air Quality Action Plan

Much of Lewisham, with the exception of the southeast of the borough, has been declared as being within an Air Quality Management Area (AQMA). In Figure 2 below you can see the area covered by AQMAs. Both were declared due to exceedances of NO_2 , the blue area in 2001 and the green in 2013.

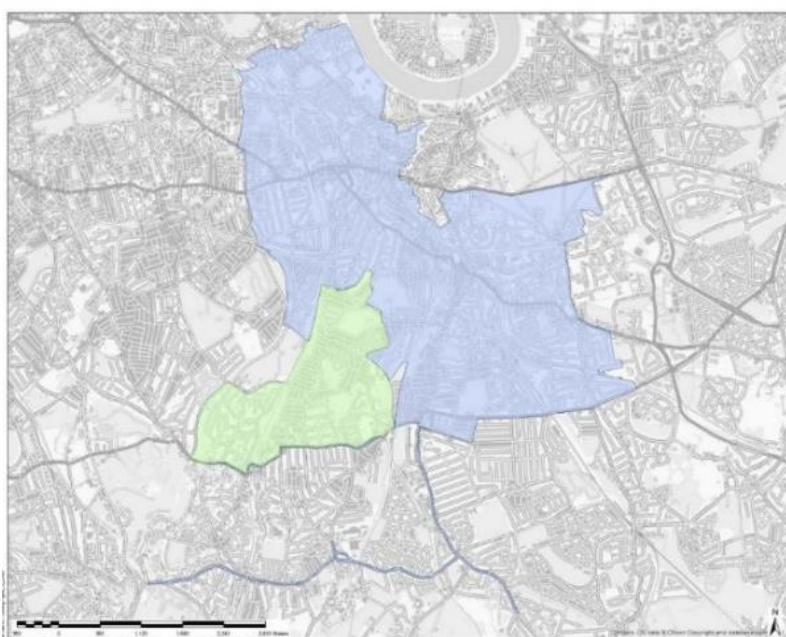


Figure 3 AQMAs in Lewisham - blue area made an AQMA in 2001, green area made AQMA in 2013

AQMAs are introduced when pollutants regularly exceeds statutory limits. Road transport is a key emitter of pollutants that impact air quality, such as NO_2 . EVs offer a solution to this problem as they produce no tail pipe emissions. The introduction of EV chargepoints will support Lewisham's aim of improving air quality.

Lewisham's Air Quality Action Plan for 2022-2027 confirms that levels of both NO_2 and PM have reduced from levels recorded in the previous period. While the overall trend for pollutants is downward and there were no exceedances of the legal limits in 2021 there is still a need to reduce emissions further. Stricter legal limits are due to be introduced in recognition of the health impacts of air pollution on human health. For example, the limit on PM up to 2.5 micrometres is due to be reduced from an annual average of 25 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 10 $\mu\text{g}/\text{m}^3$.

2 EV Infrastructure

Chargepoints refuel EVs at different speeds depending on their power output. Power outputs vary from 5 Kilowatts (kW) up to 350kW meaning the time taken to recharge an EV can vary from 15 minutes to several hours. More powerful chargers are more expensive to install and for the consumer to use, so it is important to use the most appropriate power output. This is determined by the dwell time of vehicles in a particular setting. In locations where vehicles are parked for several hours, such as a workplace car park or at home, lower power charge points are appropriate. At traditional fuel stations, where vehicles will be parked for a short time, powerful charge points capable of charging a car very quickly are necessary.

2.1 Types of chargepoints

Slow chargers, with power outputs up to 5.5kW, are typically fitted into lamp-columns or a satellite bollard drawing power from the lamp-column and make use of an existing power supply. If hosted in a lamp-column they do not introduce any additional clutter on the footway. Lamp-column chargers will only have one Type 2 AC outlet socket and are well suited to residential areas where cars will be parked for a long time.



Fast chargers, with a power output between 7-22kW, can be pole or wall mounted. Households with off-street parking commonly fit a 7kW wall mounted EV chargepoint on the exterior of the property. Pole mounted fast chargers tend to have dual Type 2 AC sockets and can charge two EVs at the same time. They are well suited to destinations where vehicles will be parked for upwards of an hour, like supermarkets or town centre car parks.

Chargepoints with a power output of 50kW or over are classed as rapid, with those over 150kW classed as ultra-rapid. They are designed to recharge an EV as quickly as possible and are similar in size to a petrol pump. They tend to be fitted with tethered cables, rather than sockets and have both CHAdeMO and CCS DC cables to account for vehicle manufacturers using different types. They may also have a Type 2 AC cable. They are used in settings like dedicated fuel stations and in locations where vans and taxis will need to recharge during their working day.



The table below summarises the approximate charging times for purely battery powered cars (BEVs) with different battery capacities along with socket types and settings.



Charger Type	Ultra-rapid 100kW+	Rapid: 50kW	Fast: 7-22kW	Lamp-column: 3.5-5.5kW
Charging time 60kWh BEV*	20-40 minutes	50 minutes	2-5 hours	7-10 hours
Charging time 150kWh BEV*	50-100 minutes	120 minutes	4 -13 hours	16 -26 hours
Charging standards/sockets	CHAdeMO & CCS 		Type 2 	
Number of EVs served	2	1	2	1
Suitable locations	Charging hubs, service stations, taxi ranks	Charging hubs, service stations, taxi ranks	Hospitality, retail and public car parks. On-Street	Residential areas conservation zones

Table 3: Summary of chargepoint types

2.2 Emerging technology

New technology and approaches are still being developed including those which enable households without off-street parking to use a domestic charger connected to their own power supply. These approaches allow residents to access lower cost energy and have the convenience of a charging directly outside their property.

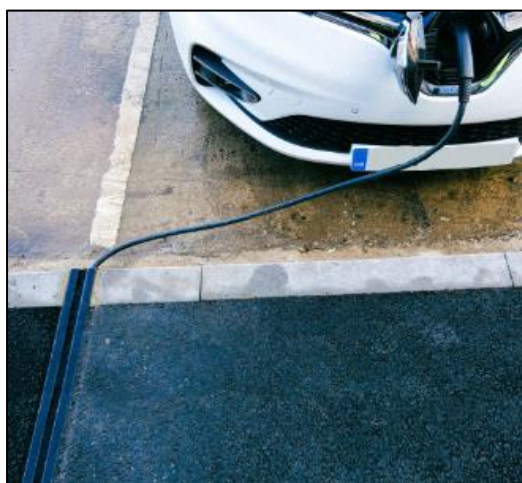


Figure 4 Image of a cable channel CP

We do not permit cables to be laid across the footway as it would make our streets less accessible for people with vision impairments and other disabilities. However, cable channels allow a cable to cross the footway without creating a trip hazard. Those without driveways can fit a domestic charger on the outside of their property and safely charge their vehicle parked on street provided they can reliably park outside of their property.

The Trojan Energy Aon chargepoint is similar in that it connects to a household energy supply. The unit is flush with the footway when not in use, with a removable pole connected to it when in use. This allows both the householder, and any member of the public with the connecting pole, to use it making it a truly public charging facility.



Figure 5 Image of a Trojan Energy Aon CP

2.3 Understanding EV driver needs

EVs need to be refuelled more often than ICE vehicles and refuelling takes longer than for a petrol/diesel equivalent. EVs have different battery capacities ranging from 15 kilowatt hours (kWh) on hybrid vehicles, up to 300kWh for heavy vehicles like refuse collection trucks. BEV cars typically have 40-100kWh batteries. Fuel efficiency for a BEV is measured in miles per kWh, with the best performing EVs travelling over 4 miles per kWh and the average being 3.5 miles per kWh. The range of a BEV therefore tends to be between 100 – 350 miles. For most drivers, this is a sufficient range for nearly all their daily trips by car, although some high mileage drivers like taxis will need additional refuelling during their working day.

The below image is adapted from TfL's EV infrastructure strategy and summarises the charging needs, by frequency and location, of different key users.







User category	From or near home or at depot (Slow standard charge)	While ‘grazing’ or at the workplace (Any charge speed)	‘On the go’ or in-transit (typically rapid charge)
	M T W T F S S M T W T F S S	M T W T F S S	M T W T F S S
	M T W T F S S M T W T F S S	M T W T F S S M T W T F S S	M T W T F S S M T W T F S S
	M T W T F S S	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	M T W T F S S M T W T F S S
	M T W T F S S	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	M T W T F S S M T W T F S S
	M T W T F S S M T W T F S S	M T W T F S S	M T W T F S S
	M T W T F S S	M T W T F S S	M T W T F S S

Figure 6: Summary of keys users charging needs by frequency and location.

Lewisham, as the Highway Authority, is uniquely well placed to provide conveniently located chargepoints in residential areas for home charging. There may also be opportunities to install destination or rapid chargers, in town centres or by main roads, but these will need to be attractive sites for consumers to use. For example,

ultra-rapid chargers will still take 15 minutes or so to recharge a vehicle so are best located where there are local services and shops.

3 Current & future EV infrastructure provision

Demand for chargepoints is driven by the number of EVs using the borough's roads. EV chargepoints have been provided by both the public and private sector, with the council having led the way. Of the 195 chargepoints in Lewisham⁶ in January 2023 the council facilitated the installation of 120 by either securing Government grant funding and commissioning chargepoint operators to install chargers in lamp-columns or licensing Lewisham Council owned land to Source London. The council also installed a further 41 lamp-column chargepoints in early 2023 not captured in the January figures.

3.1 Current EV Ownership

The following table shows how many plug-in vehicles (cars, light goods vehicles and motorcycles) were registered in Lewisham up to the end of quarter 3 of 2022.

Number of EVs and EVs as a percentage of all vehicles	2018 Q4	2019 Q4	2020 Q4	2021 Q4	2022 Q3
Lewisham	319	587	935	1,509	1,874
	0.37%	0.69%	1.09%	1.80%	2.26%
Southwark	555	881	1,356	2,028	2,419
	0.84%	1.35%	2.03%	3.14%	3.74%
Greenwich	404	669	1,061	1,742	2,129
	0.46%	0.76%	1.27%	2.02%	2.48%
London	21,543	34,025	51,869	84,769	109,282
	0.72%	1.14%	1.74%	2.88%	3.71%
UK	191,890	260,716	429,988	740,430	993,207

Table 4: Number of registered EVs and EVs as a percentage of total registered vehicles

The growth in the number of EV's registered in Lewisham is broadly consistent with that seen in the neighbouring boroughs of Greenwich and Southwark. The proportion of registered vehicles that are electric in the borough is only 0.22% greater in Greenwich than Lewisham in the third quarter of 2022. Overall, all three boroughs show consistent and gradual growth from 2018 up until the end of 2022. Although Lewisham has the fewest registered EVs of the three boroughs the rate of increase from 2018 has been highest in Lewisham with 5.9 times more EVs registered in quarter 3 of 2022 than in quarter 4 of 2018. Over the same period in Southwark there

⁶ [Electric vehicle charging device statistics: January 2023 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/electric-vehicle-charging-device-statistics-january-2023)

were 4.4 times more EVs registered and 5.2 times more in Lewisham. The maps below show where these EVs are registered across the borough and the percentage of car owning households with access to off-street parking.

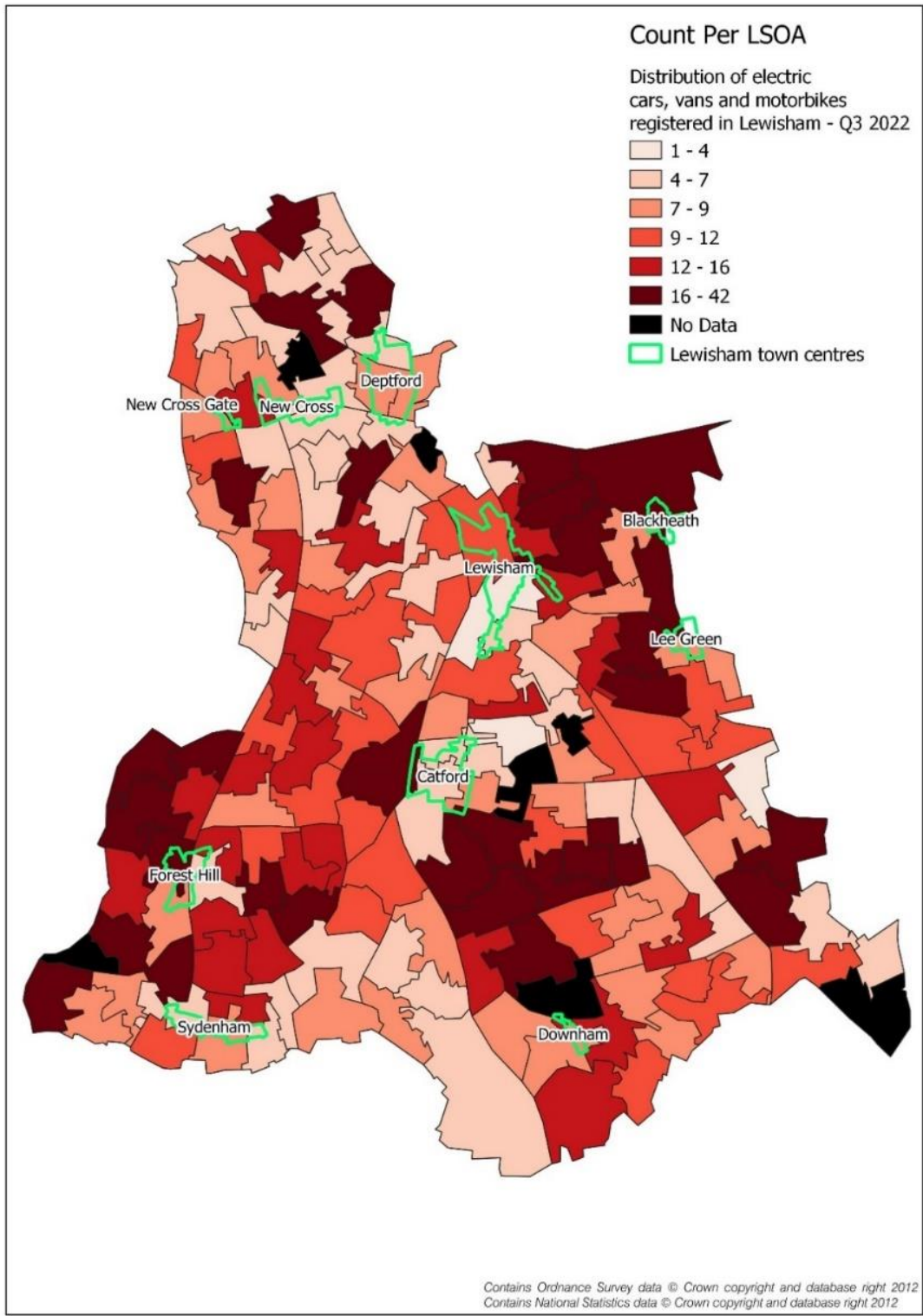


Figure 7 Number of registered EVs per LSOA

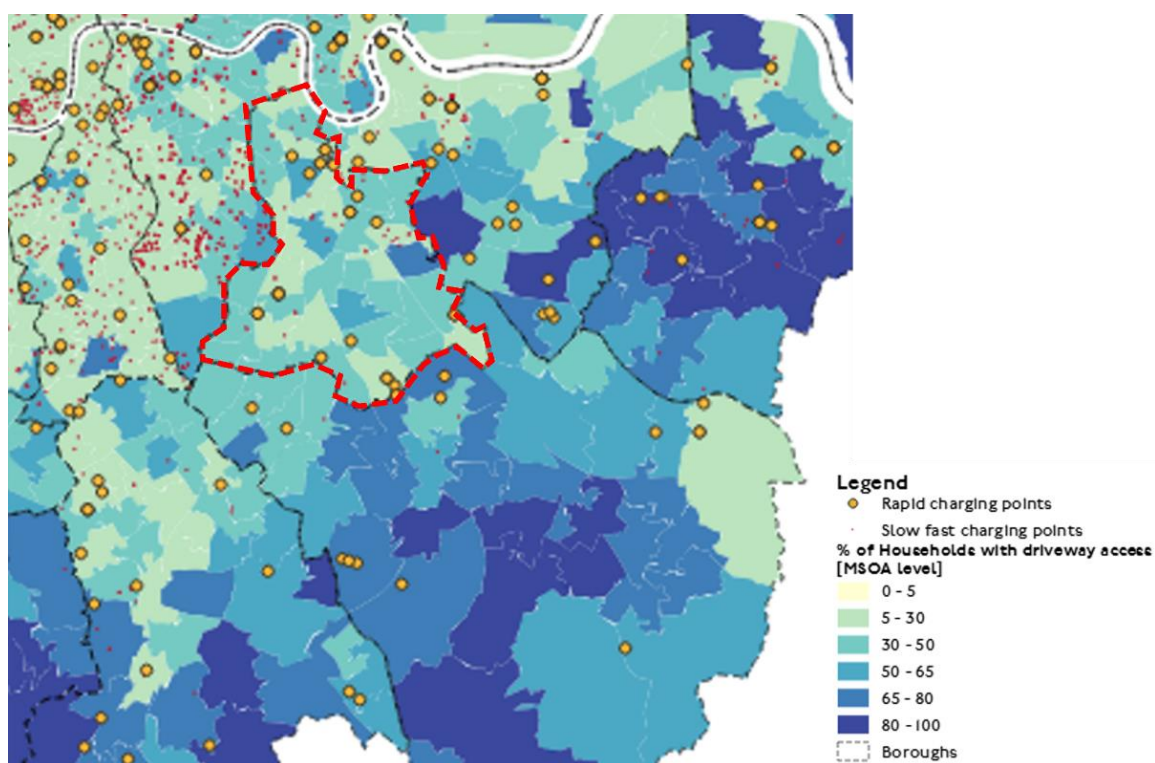


Figure 8: Percentage of car owning households with access to a driveway and distribution of public chargepoints. Source: TfL, Zap-map and London datastore.

There is some correlation between areas with high EV registrations and those where properties have greater access to off-street parking. The highest concentrations of EVs are all found in areas where at least 30-50% of households have access to off-street parking. This includes Blackheath, immediately south of Catford town centre and in the Lee Green and Forest Hill areas. However, the Honour Oak, Blythe Hill, Crofton Park and Brockley areas all have reasonable levels of EV ownership despite the level of household access to driveways being between 5-30%.

3.2 Current EV Infrastructure

DfT statistics on the number of chargepoints in each local authority are released every quarter.⁷ The below table shows the situation in January 2023 for Lewisham, and the neighbouring boroughs of Greenwich and Southwark. In Southwark there are 3 EVs to every public charger, 8 in Greenwich and 10 in Lewisham. A 10:1 ratio was recommended as a target by the EU 2014 Alternative Fuel Infrastructure Directive and Lewisham is far ahead of the UK ratio of 21:1⁸.

⁷ [Electric vehicle charging device statistics: January 2023 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/electric-vehicle-charging-device-statistics-january-2023)

⁸ [Trends in charging infrastructure – Global EV Outlook 2022 – Analysis - IEA](https://www.iea.org/publications/energy-outlook-2022)

	No. of EVs*	No. of EVCPs	No. of rapid CPs	CPs per 100,000 people	EVs to CP ratio
Lewisham	1,874	195	31	65	10
Greenwich	2,129	271	56	93.7	8
Southwark	2,419	796	26	259.8	3
UK	993,207	37,055	6,887	55	27

Table 5 Number of registered EVs to charge points as of January 2023 – DfT (*Q3 2022 data)

A more sophisticated measure of the correct ratio of chargepoints to EVs has recently been developed by the EU to take account of the power output of different chargepoints. Nation states should aim to provide 1kW of public charging for every BEV and 0.66kW for every PHEV. In lieu of UK guidance on a target ratio we will use this as an indicator of how well the supply of chargepoints is meeting demand from EVs registered locally.

At the end of September 2022 there were 974 BEVs and 900 PHEVs registered in Lewisham. 1,568kW of public charging capacity is needed to meet the demand from this number of EVs. By April 2023 there were 239 chargepoints installed with a combined power output of 4,476, indicating that there is sufficient capacity to meet the immediate demand.

Charger type	Number of EVCPs	Power available (kW)
Lamp-column 5kW	115	575
Standard 7kW	93	651
Rapid 50kW	14	700
Ultra rapid 150kW	17	2,550
Total	239	4,476

Table 6: Combined power output of public chargers in Lewisham

Lewisham's strategic approach has been to ensure that all households are within a 500m walk of their nearest chargepoint. The map above shows all chargepoints with a power output of up to 7kW, which are suitable for overnight home charging, with the 500m real world walking distance coverage shown.

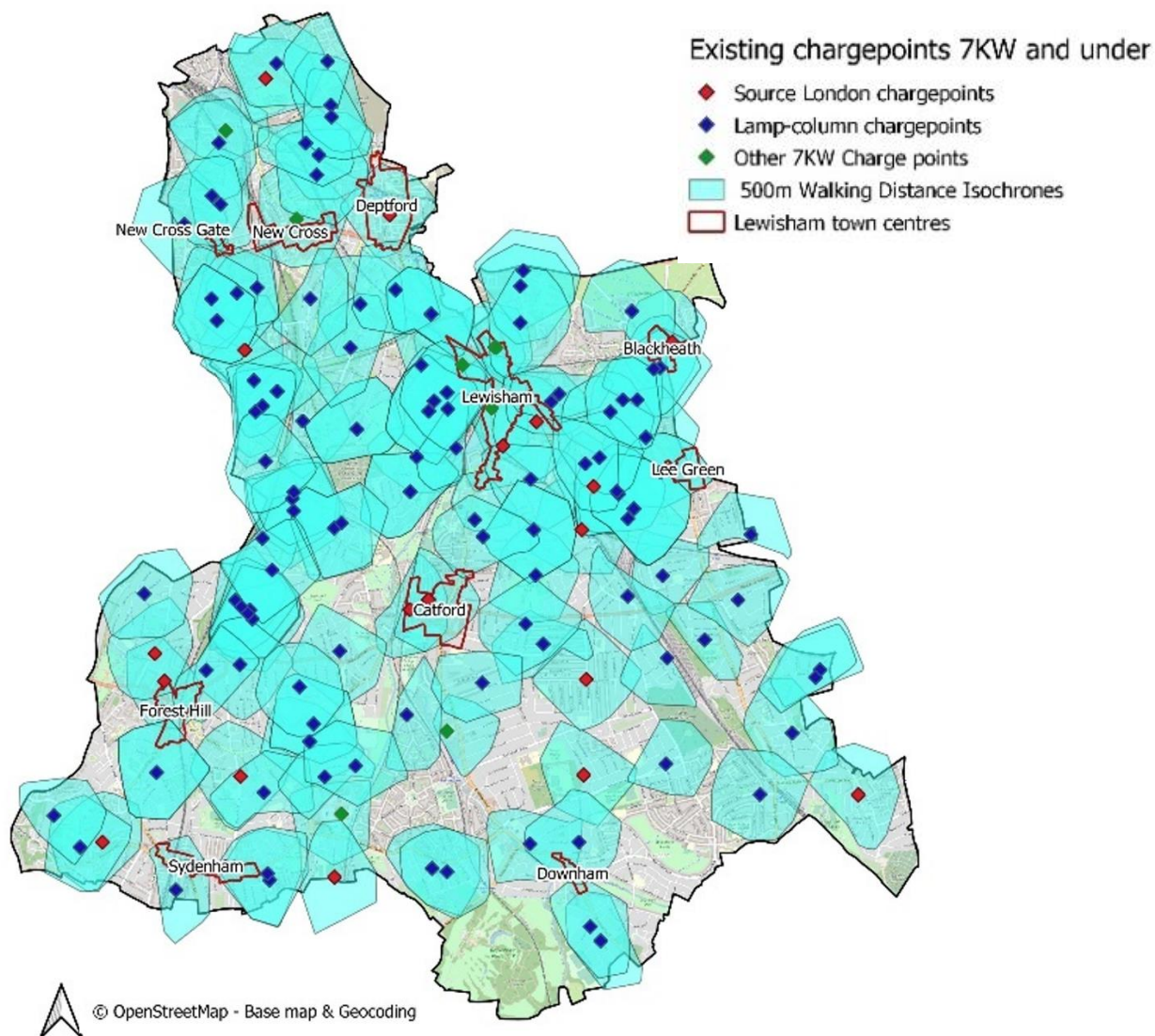


Figure 9: Map showing charge points with a power output up to 7kW and the 500m walking distance.

It has also been Lewisham’s strategy that income from chargepoints should meet ongoing maintenance costs. To achieve this there needs to be good use of the chargepoints we install. We monitor usage of chargepoints we have directly commissioned using a dashboard compiled and maintained by the Greater London Authority. This allows us to benchmark the performance of our chargepoints against those in other London boroughs. The graph directly below shows the percentage of time that the chargepoint network, with a power output up to 22kW, commissioned by Lewisham have had vehicles connected to them. The utilisation of chargepoints in Southwark (blue) and Greenwich (yellow) are also shown for comparison.

Lewisham’s slow and fast chargepoints had a utilisation rate consistently above 20% in 2022, rising to 28.3% in December 2022. Out of the three boroughs, this is the

highest utilisation and it is nearly double the London average of 14.4%. Lewisham’s smaller asset base is used more intensively than those of our neighbouring boroughs.

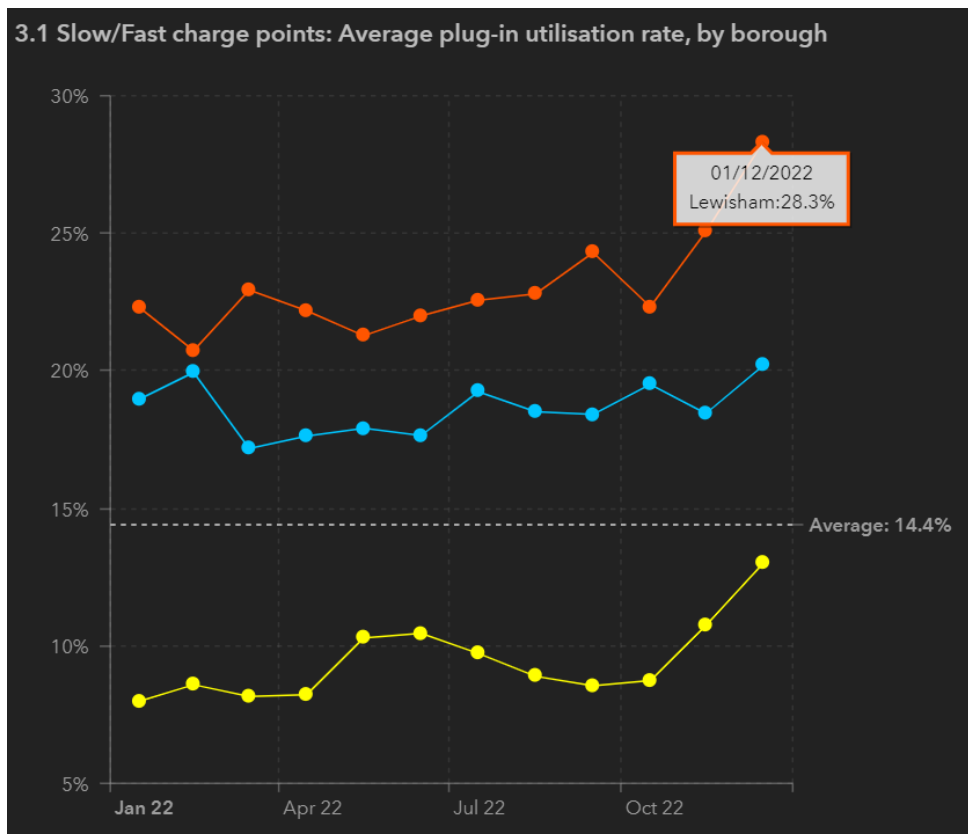


Figure 10 Comparison of average plug-in utilisation rate of slow chargepoints

While the council is well placed to install chargepoints in residential areas so that householders have convenient access to home chargers we also install rapid and opportunities to do so. The private sector is expected to take a larger role in delivering these kinds of chargepoints as demand for them grows.

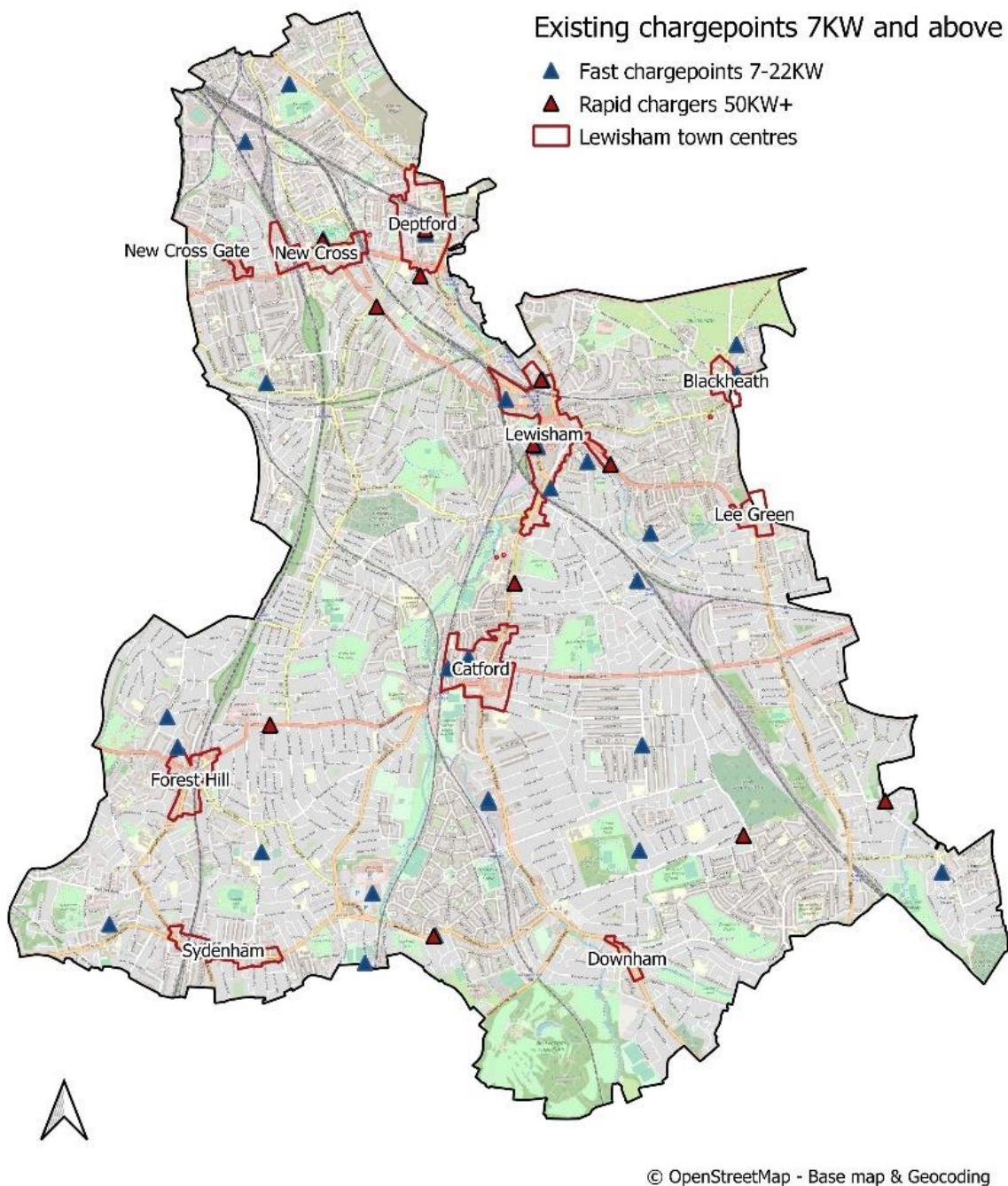


Figure 11: Map of existing chargepoints 7kW and above

There are 31 rapid chargers in the borough with 12 of these installed on land managed by Lewisham Council. The locations of chargepoints suitable for on-route or destination charging (ie 7kW or above) are shown on figure 10 above.

Non-council provided chargepoints tend to be in supermarkets, retail developments or at fuel stations. Chargepoints can be found at Aldi, Lidl, Sainsbury's, Tesco and Asda stores with the highest concentration at Asda in Lewisham with 12

chargepoints. The MFG group have installed seventeen 150kW ultra rapid chargers at three fuel stations they own in the borough: Catford (8), Forrest Hill on the south circular (4) and Lewisham on the A21 (5).

The provision of fast or rapid chargers in the major town centres of Lewisham and Catford is good. Deptford and New Cross are also equipped with rapid and destination chargepoints. However, provision at the borough’s district town centres is patchy. Forest Hill and Blackheath have fast chargers on the edge of the town centres but Sydenham, New Cross Gate, Downham and Lee Green have no destination chargers.

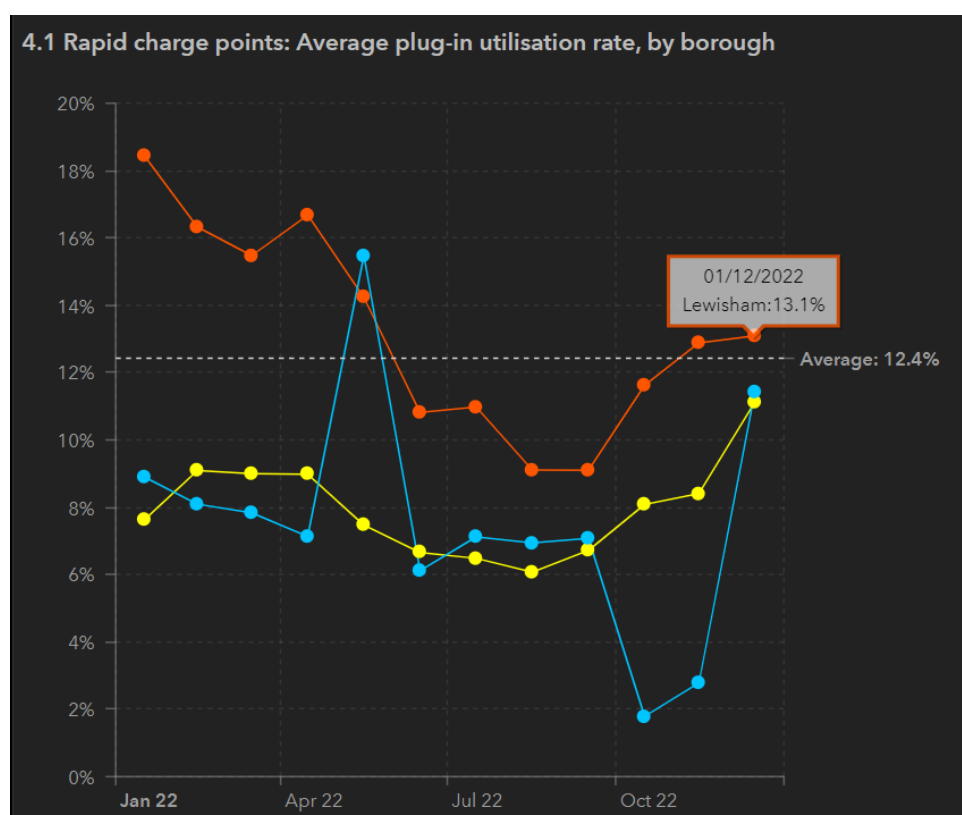


Figure 12 Comparison of average plug in utilisation rate of rapid charge points

The graph directly above shows the utilisation of rapid chargepoints. Over 2022 utilisation has been around the London average although with a smaller asset base this will be heavily affected by any reliability issues so no strong conclusions can be drawn.

3.3 Future Energy Demands

The UK power grid needs to be able to keep up with new demand on the power supply. Over the next twenty-five years the decarbonisation of our energy system will see increased demand on electricity networks with two major drivers being the widespread adoption of heat pumps replacing gas boilers and the uptake of EVs. The National Grid have modelled four possible scenarios to help forecast possible future demand on the power network. UK Power Networks, the company which is responsible for managing the electricity distribution network in our area and providing new power connections, have used these scenarios to look at what the local impact is on the electricity distribution network.

This work enables an analysis of what investment is needed in the electricity distribution network over the five-year period from 1 April to 31 March 2028 and helps set the price controls on electricity distribution. This five-year period and business planning exercise is referred to as RIIO-ED2⁹ and is designed to ensure the delivery of reliable network and safeguarding against any over exertion of the grid.¹⁰ It will also adapt the network to accommodate vehicle to grid and greater levels of distributed supply and generation to the network.

UKPNs investment strategy is aligned with the Consumer Transformation scenario, which is judged as the lowest cost route to Net zero. It is also the most ambitious scenario in which new low carbon technologies are adopted sooner rather than later. While there is flexibility in the UKPN plan it provides us with a platform to plan for rapid adoption of EVs and know that the grid will cope with the increased demand.

3.4 Forecast need for EV infrastructure

Various forecasts exist regarding the uptake of EVs in the UK. This is the main driver of demand for chargepoints. In creating this strategy we have referred to two forecasts that provide recent and borough specific estimates of EV adoption; UKPN's application of National Grid Future Energy Scenarios to the local area¹¹ and the National EV Insights and Strategy (NEVIS) forecasts.

⁹ [UKPN RIIO-ED2 Business Plan](#)

¹⁰ [2022-dfes-report.pdf \(umbraco.io\)](#)

¹¹ [UKPN Future Energy Scenario EV Forecasts](#)

We have relied on the NEVIS forecasts as they have been specifically provided to aid local authorities developing their EVI strategies and they also forecast the number of chargepoint sockets needed. It is important to highlight that the forecasts, shown in the tables below, are for the number of sockets required rather than the number of chargepoints. Chapter 4 provides greater detail but chargepoints have either one or two sockets.

NEVIS has modelled three different scenarios, slow, medium and fast uptake of EVs, to give a range of the likely number of EVs in the borough. Under the slow adoption forecast it is assumed that by 2030 70% of new car and van sales will be EV while under the medium one it is assumed that by the same date 100% of new vehicle sales will be EV. In the fast EV adoption scenario, the assumption is that by 2027 100% of new cars and vans sold will be EVs. While this assumption seems overly optimistic to be realistic the number of projected EVs are less than those in the most ambitious National Grid Future Energy Scenario, Consumer Transformation. This is despite the Consumer Transformation scenario assuming that 100% EV sales will not be achieved until 2030. For this reason, we have considered that the fast sales adoption forecasts is possible to achieve. The table below shows the NEVIS range of forecast EV uptake.

Forecast number of EVs		2023	2025	2030
Fast	BEV	3,370	9,004	35,300
	PHEV	1,637	2,318	3,563
Medium	BEV	3,370	8,921	32,887
	PHEV	1,637	2,308	3,397
Slow	BEV	3,234	7,685	24,603
	PHEV	1,595	2,127	2,840

Table 7: NEVIS forecasts - number of EV car and vans registered in Lewisham.

The graph below shows the upper and lower range of the forecasts, alongside the actual number of EVs up to Q3 of 2022. While the need for greater numbers of chargepoints between 2023 and 2026 is clear the exact number is uncertain. We will monitor how closely EV registrations match these forecasts to understand how many chargepoints will be required.

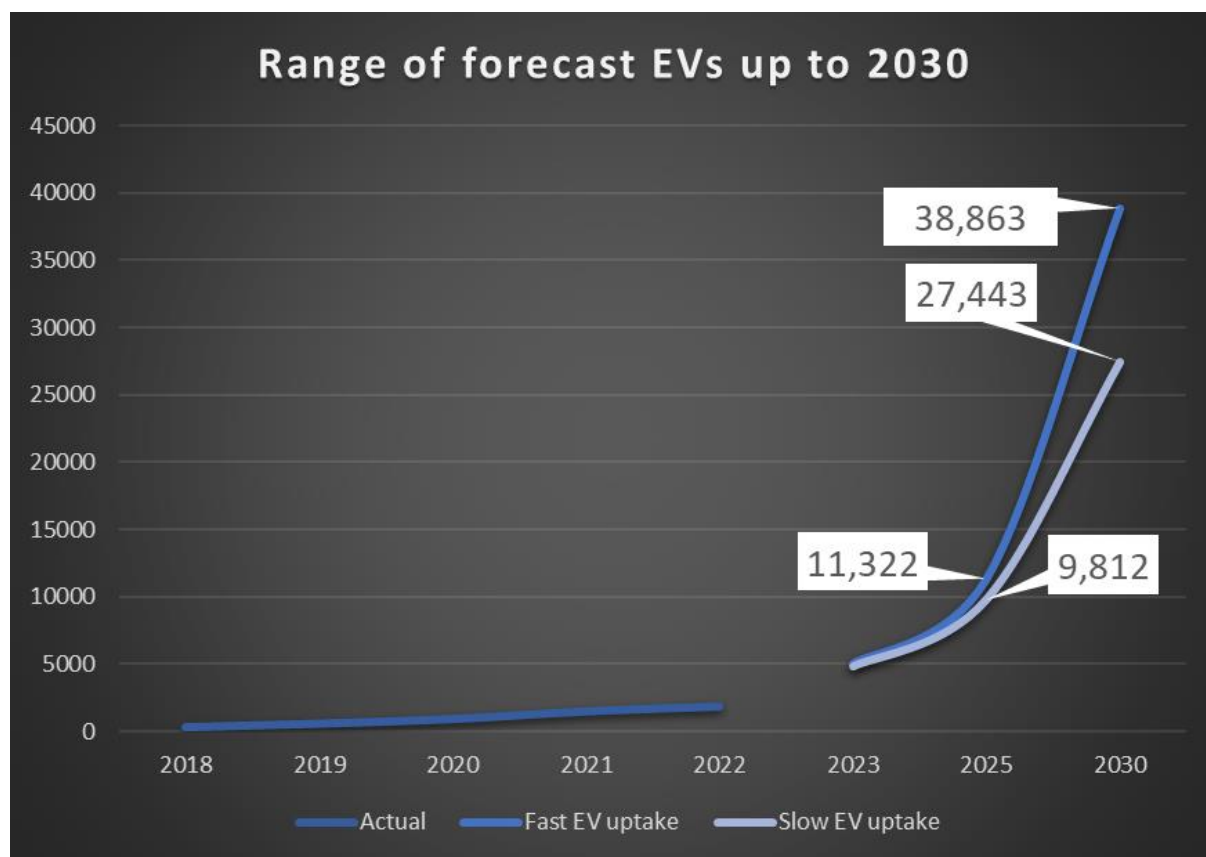


Figure 13 Number of actual registered and future forecasted EVs

NEVIS forecasts also estimate how many chargepoint sockets of four different charger types will be required. ‘Standard’ chargepoints are those less than 22kW, typically 7kW. Fast are those with a minimum of 22kw, rapid with a minimum of 50kW and ultra-rapid a minimum of 150kW.

Forecast no. of sockets by power output (kW)		2023				2025				2030			
		7	22	50	150+	7	22	50	150+	7	22	50	150+
Fast	Resi	162	28	25	10	413	45	33	15	1497	103	52	20
	Hub	130	25	22	17	272	37	28	25	597	68	35	55
Medium	Resi	162	28	25	10	402	45	32	14	1390	96	49	19
	Hub	130	25	22	17	265	36	28	24	558	65	32	51
Slow	Resi	155	26	24	9	346	39	28	12	1050	73	36	15
	Hub	125	24	22	15	230	31	25	22	420	49	25	38

Table 8: NEVIS detailed forecasts – number of chargepoint sockets required in Lewisham.

The forecasts also allow for different approaches of providing chargepoints. The residential approach (resi in the above table) will see local authorities installing a

distributed network of chargepoints that are designed to provide convenient home charging. The hub approach will see local authorities provide ultra-rapid chargers at hubs that can refuel an EV faster and which are suited to a model of charging similar to refuelling a petrol powered vehicle. The upper and lower range of chargepoint sockets needed is shown in the graph below. A logarithmic scale is used to account for the relatively small number of ultra rapid chargepoint sockets and much larger number of standard chargepoint sockets.

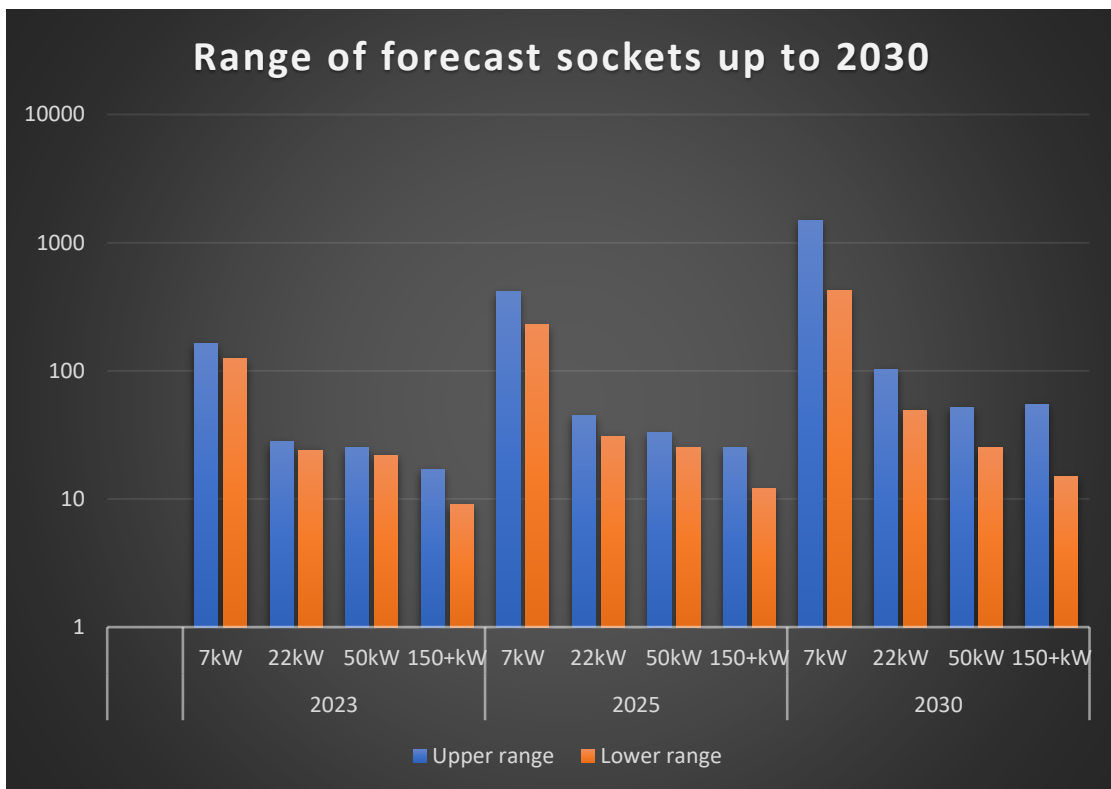


Figure 14: Forecast range of chargepoint sockets by charger type

We have estimated how many sockets are provided by the chargepoints currently installed in the borough. Lamp-column chargepoints always have one socket and we know there are 115 of these in the borough. While these are 5.5kW we have counted them as 7kW as it is the nearest match to the NEVIS categories. We have assumed that the 49 Source London chargepoints and 44 other non-rapid chargepoints installed by other chargepoint operators are dual socket as this is typically the case. For the 31 rapid chargers we have assumed they have one socket. While these may have up to three tethered cables this is because there is no universal DC charging socket and they are often designed so that only one should be in use at any time.

No. of CP sockets	Q3 2022	
	7kW – 22kW	50kW+
Lamp-column chargepoints (single sockets)	115	
Source London (dual sockets)	98	
Other non-rapid chargers (dual sockets)	88	
Rapid chargepoints (single sockets)		31
Total number of sockets	301	31

Table 9 Summary of number of charge point sockets in Lewisham

The result is that there are 301 sockets in chargers with a power output 7-22kW and 31 sockets in chargers with a power output 50kW or higher. Lewisham has therefore already exceeded the upper limit of NEVIS forecasts needed by the end of 2023.

Under the fast adoption residential scenario, the forecast is for 190 sockets which are 7-22kW output and for 35 rapid or ultra-rapid chargepoints.

However, the strong utilisation figures of our lamp-column chargers suggests that these forecasts may be an underestimation of need. Monitoring of actual usage of our chargepoints is a stronger basis for determining what additional rollout of chargepoints is needed.

4 Action Plan

Objective 1

- 1a) Install chargepoints in residential areas so that all households are within 500m of their nearest one by the end of 2024.
- 1b) Prioritise requests from residents and businesses who are high mileage drivers and blue badge holders less able to access chargepoints.
- 1c) Intensify the network of residential chargepoints in response to observed usage of chargepoints, with the average utilisation rate kept below 35%.
- 1d) Deliver charge points that meet the accessibility standards set out in PAS:1899:2022
- 1e) Aim to have public charging capacity that provides 1kW for each BEV and 0.66kW for each PHEV registered in the borough.
- 1f) Install destination and rapid chargers where there are good opportunities to do so and where town centres lack provision.
- 1g) Continue working towards having 50% of car club vehicles EV by 2025 and 100% by 2030 by providing chargepoints at car club bays.

Objective 2

- 2a) Use Government and private funding opportunities for EV chargepoints so that the rollout of chargepoints is cost neutral for Lewisham.
- 2b) Make use of S106 agreements to help fund car club bays at new developments and assist with electrification of existing bays.
- 2c) Aim to maintain high utilisation of our chargepoints at above 25%
- 2d) Continue to make best use of the council's assets to deploy rapid and destination chargers.

Objective 3

- 3a) Monitor usage data to ensure they are well used and located.
- 3b) Keep abreast of emerging technologies and work with private sector to trial solutions.
- 3c) Apply best practice from across the UK.

Objective 4

- 4a) Deliver dedicated parking bays at all future chargepoints.
- 4b) Ensure that S106 planning contributions are sought to support electrification of car club bays and other EV charging infrastructure where appropriate.
- 4c) Embed the rollout of chargepoints into programmes such as mobility hubs and other relevant LIP schemes.
- 4d) Update this strategy by the end of 2026

4.1 Objective 1

- Deliver appropriate infrastructure in the right locations by:
 - Focusing our infrastructure delivery on high-mileage drivers (car clubs, taxis, vans etc).
 - Ensuring residential areas have sufficient chargepoints to support home charging.
 - Using land we manage to provide chargepoints in town centre locations and alongside main roads where good opportunities exist to do so.

1a) Install chargepoints in residential areas so that all households are within 500m of their nearest one by the end of 2024.

Lewisham has made good progress on delivering the key actions under Objective 1 from the 2019-2022 implementation plan. We are close to meeting our ambition to have all households within 500m of their nearest chargepoint. The gaps that have been identified, using real world walking distances, will be the focus of the next round of chargepoint installations. We will apply for additional ORCs funding in 2023 to achieve this.

1b) Prioritise requests from residents and businesses who are high mileage drivers and blue badge holders less able to access chargepoints.

1c) Intensify the network of residential chargepoints in response to observed usage of chargepoints, with the average utilisation rate kept below 35%.

Once all households are within 500m of their nearest chargepoint we will adjust our approach to rolling out infrastructure in residential areas. The focus will be on meeting the needs of high mileage drivers as this will result in the largest emissions reductions. We will add to the existing network of residential chargepoints based on usage data and the requests we receive. The image below shows how requests for chargepoints will be assessed and treated.

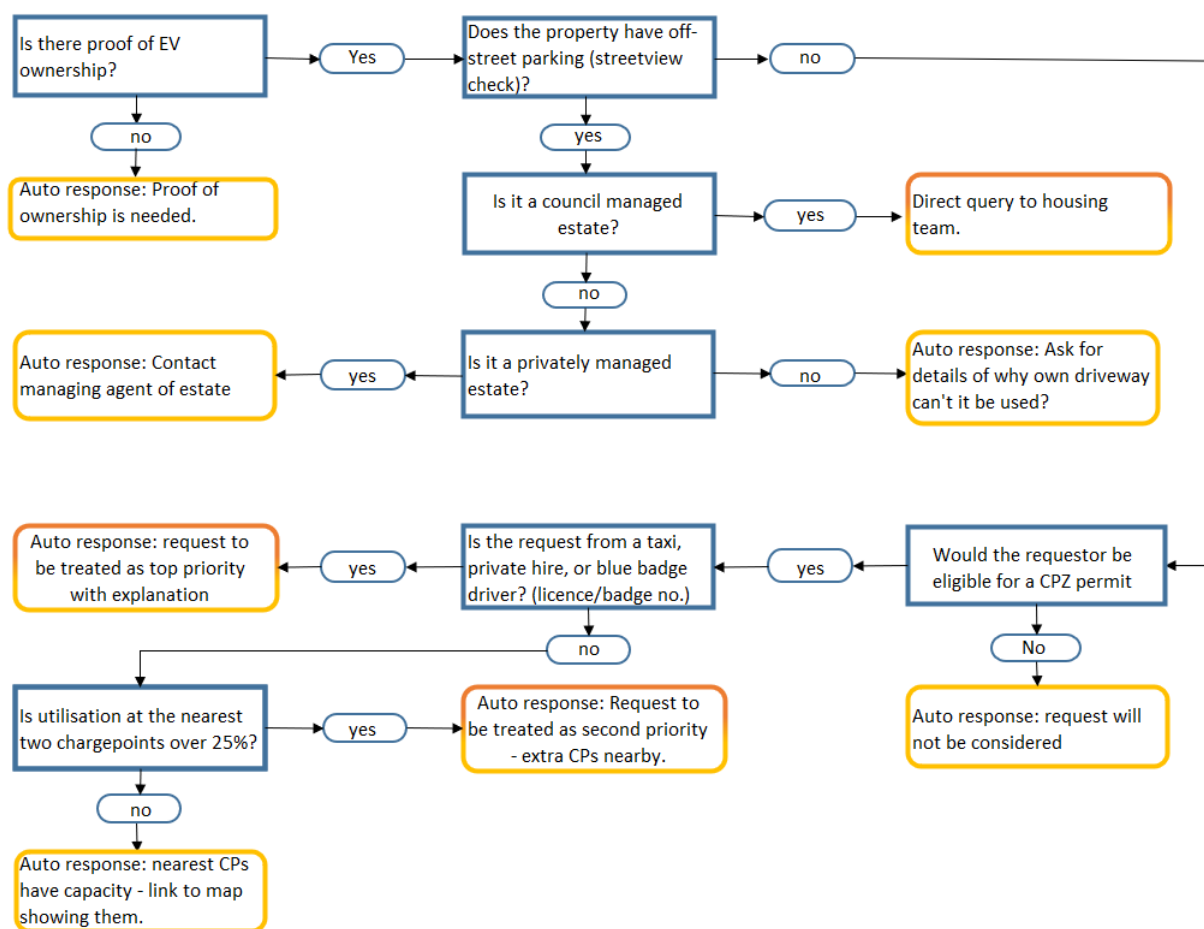


Figure 15: process chart for handling requests for chargepoints

We will only consider requests from EV owners without access to off-street parking and, if within a controlled parking zone, eligible for a parking permit. Top priority will be given to requests from taxi, private hire and van drivers, or those with a blue badge. We will endeavour to install a chargepoint as near as we can to their property if there is not already one within 50m that has low utilisation. Second priority will be given to requests from EV drivers in an area where nearby chargepoints have high utilisation.

1d) Deliver charge points that meet the accessibility standards set out in PAS:1899:2022

On October 2022 the British Standards Institute published a specification for accessible charging infrastructure; PAS1899:2022. We will incorporate these voluntary standards within future supplier contracts so that all new chargepoint

installations meet the minimum requirements regarding the physical chargepoint design, chargepoint placement and public realm around the chargepoint. Existing chargepoints will be upgraded to meet the accessibility standards as the assets are replaced.

As EVs become more commonplace there will be a need to ensure that an adequate number of chargepoints are dedicated to disabled users. There is no guidance advising on the proportion of chargepoints that should be allocated to disabled users and have accompanying parking bays with larger dimensions. The London Plan does contain standards for general provision of disabled parking at non-residential developments. Generally, 5% of the total parking provision should be designated as disabled bays.

Initially we will provide a dedicated disabled bay served by a chargepoint at hub sites where there are six or more chargepoints. This are likely to be either at destinations such as town centres or hubs for on-the-go charging.

1e) Aim to have public charging capacity that provides 1kW for each BEV and 0.66kW for each PHEV registered in the borough.

Our approach to chargepoint provision is to match the supply of public chargepoint capacity with local demand for it. We will undertake annual monitoring of the above KPI to understand how well need for public charging infrastructure is being met.

1f) Install destination and rapid chargers where there are good opportunities to do so and where town centres lack provision.

Lewisham operates 20 car parks across the borough. Some have already had chargepoints installed at them but more can be achieved by further utilising our land holdings to function as charging hubs. TfL is seeking to work with boroughs, especially those south of the river where they own less land, to identify sites that could function as rapid charging hubs. To qualify as a hub there will need to be a minimum of 6 rapid chargers and approximately 500m² of land. These sites will also need to be close to major roads to attract enough custom to be viable.

The process of identifying hub charger locations will be co-ordinated with other workstreams, such as creating local mobility hubs, to understand which of these locations could accommodate chargepoints.

By March 2024 we will have audited our existing land holdings and identified potential mobility hub sites. By March 2025 we will have appointed a supplier to deliver rapid and ultra-rapid chargers. By the end of 2026 every district town centre in Lewisham will have a rapid charger serving it.

1g) Continue working towards having 50% of car club vehicles EV by 2025 and 100% by 2030 by providing chargepoints at car club bays.

Zipcar hold the contract to operate from on-street bays for car club vehicles. These operate on a roundtrip basis but Zipcar also provide one-way hire vehicles that can be picked up in one on-street location and dropped off elsewhere. There are 72 parking bays with roundtrip vehicles based in them and on average there are about 140 one-way vehicles in the borough. In total there are 212 car club vehicles operating on-street in Lewisham and our aim is to have half of these be BEVs by 2025 and all of them by 2030.

The operator is currently market testing BEVs within their London roundtrip fleet with a trial of 10 BEVs launched in December 2022. Some vehicles are in bays without dedicated charging infrastructure and some in bays with to test the difference in member experience. Once car club operator infrastructure needs are known we will work with them to provide it, including providing EV chargepoints at all parking bays where they require them.

In the London-wide one-way fleet there are already 1,000 BEVs with approximately 80 based in Lewisham. These use public chargepoints to meet their refuelling needs, particularly rapid and ultra-rapid chargers. As per action 1f we will continue to provide this infrastructure where feasible to do so.

4.2 Objective 2

- Make use of funding opportunities to provide and maintain EV chargepoints.

2a) Use Government and private funding opportunities for EV chargepoints so that the rollout of chargepoints is cost neutral for Lewisham.

Over the course of the previous implementation plan Lewisham successfully secured Government funding from both the Go Ultra Low City Scheme (GULCS) and On-street Residential Chargepoint Scheme (ORCS). Government have announced a new Local Electric Vehicle Infrastructure (LEVI) fund which will operate from 2022/23 – 2025/2026 and this will be our main source of funding for period covered in this plan. We will seek to leverage additional private funding into EVI.

We will apply for ORCS funding in 2023 to deliver additional residential chargepoints while developing a business case for how best to use the LEVI funding in 2024/25. London has been allocated nearly £36m of LEVI funding and grants will be made to individual London boroughs using a similar formula that was used nationally to allocate the grant funding. This formula takes account of how many households lack off-street parking, deprivation and the number of chargepoints that have already been delivered.

With 59% of households in Lewisham not having access to off-street parking the borough could expect a grant between £750,000 - £1.1m. Previous government grant funding has attracted a degree of private match funding so the total budget available to install chargepoints will be larger than the grant award. We will partner with other local authorities to gain greater purchasing power when procuring chargepoints.

We will develop a business case throughout 2023 to determine what is the best value for money way of operating future installations from 2024/25 onwards. This will consider owning and operating the chargepoints, leasing the land to a private operator or continuing with the current concession contracts.

2b) Make use of S106 agreements to help fund car club bays at new developments and assist with electrification of existing bays.

We will continue to use the planning system to secure chargepoints on new developments that serve residents. On larger developments which generates significant amounts of service and deliveries we will also secure EVI that serves the needs of these vehicles. We will also adopt best practice and require developers to

contribute towards the electrification of existing car club bays should this be required.

2c) Aim to maintain high utilisation of our chargepoints at above 25%

Our existing lamp-column chargepoints are well utilised, indicating that there is a clear need for additional charge points. Our approach will be to match EVI supply with demand. Analysis of usage data and resident requests will inform where new chargepoints are installed, once all households are within 500m of one. Our aim is to keep utilisation above 25% so that the assets are earning revenue and achieving best value for money.

2d) Continue to make best use of the council's assets to deploy rapid and destination chargers.

As per action 1f we will install EVI on council land where the sites are suitable for EVI. Lewisham operates 20 car parks across the borough. Some have already had chargepoints installed at them but more can be achieved by further utilising our land holdings to function as charging hubs. TfL is seeking to work with boroughs, especially those south of the river where they own less land, to identify sites that could function as rapid charging hubs. To qualify as a hub there will need to be a minimum of 6 rapid chargers and approximately 500m² of land. These sites will also need to be close to major roads to attract enough custom to be viable.

The process of identifying hub charger locations will be co-ordinated with other workstreams, such as creating local mobility hubs, to understand which of these locations could accommodate chargepoints.

By March 2024 we will have audited our existing land holdings and identified potential mobility hub sites. By March 2025 we will have appointed a supplier to deliver rapid and ultra-rapid chargers. By the end of 2026 every district town centre in Lewisham will have a rapid charger serving it.

4.3 Objective 3

- Ensure the charging network remains fit for purpose, can cater for future expansion and is adaptable to emerging technologies.

3a) Monitor usage data to ensure they are well used and located.

The key performance indicators we will use to assess how well our assets are performing going forward are shown in the table below.

KPI	Target
Utilisation of fast/slow chargepoints	Between 25% - 35%
Ratio of public charger power output to registered EVs	1kW for each BEV & 0.66kW for each PHEV registered.
Number of EVs registered in the borough	In line with regional average

Table 10: KPIs to be monitored

Utilisation of chargepoints is the most important metric. It indicates how well we are matching the supply of chargepoints with demand from EVs and that we are locating them correctly if they are getting well used. However, if the utilisation is too high it could indicate that EV owners are finding it hard to find one that is free when they need one.

To understand how well the supply of public chargepoints is meeting demand we will use a measure developed by the EU. Our target is to ensure there is 1kW of power for each BEV and 0.66kW of power for each PHEV registered in the borough.

We will also monitor the number of EVs registered in the borough with the aim that EV registrations is in line with the London average. This will indicate that our approach to chargepoint delivery is not providing a barrier to the uptake of EVs.

3b) Keep abreast of emerging technologies and work with private sector to trial solutions.
3c) Apply best practice from across the UK.

At the time of publication of this plan the latest technologies on the market, such as cable channels, can provide a direct connection to households’ domestic power supply. We will work towards launching a trial of this technology by January 2024 as it has the potential to reduce the costs paid by drivers for the electricity they use. We

will continue to monitor developments and trial new technology as it comes onto the market.

In terms of consumers' experience central Government have identified this as an issue and are legislating to improve the interoperability of chargepoint networks. This should also cover standards around futureproofing for vehicle to grid and smart charging. We will continue to incorporate best practice into our procurement documents to provide the best possible consumer experience.

4.4 Objective 4

- Encourage more sustainable travel, including EVs for any essential car trips, through supporting policy frameworks, initiatives and public engagement exercises, drawing on best practice from around the UK and beyond.

4a) Deliver dedicated parking bays at all future chargepoints.

Providing dedicated EV parking bays alongside chargepoints improves access for EV drivers. Chargepoints within controlled parking zones (CPZs), such as lamp-column chargepoints, will be dedicated for permit holders who own an EV. This will restrict access to local residents and businesses and maintain the integrity of the CPZ.

Higher power chargepoints, or those outside a CPZ will have a dedicated bay that allows access for all EV drivers. The use of traffic management orders to create dedicated EV parking bays will allow for enforcement action to be carried out. EV bays will have maximum stay periods which vary according to the power output of the particular chargepoint. Our aim will be to ensure that once an EV is charged it must be parked elsewhere so the chargepoint can be made available for others. Subject to statutory consultation, we anticipate maximum stay periods of:

- 24 hours for lamp-column chargepoints
- 2-6 hours for 7-22kW chargepoints
- 1 hour for 50kW chargepoints



Figure 16: Example signage for chargepoints in CPZs

- 30 minutes for ultra-rapid chargepoints, over 100kW

4b) Ensure that S106 planning contributions are sought to support electrification of car club bays and other EV charging infrastructure where appropriate.

Mobility hubs are small local transport interchanges. They can include public transport, shared mobility such as car clubs, bike or scooter hire and features such as on-street bike storage or EV charging infrastructure. They can be co-located near local amenities and retail sites. They enable travellers to make smooth and safe transfers between different modes, swapping private cars for shared vehicles, bikes, buses, trains, scooters or walking. We are focused on piloting mobility hubs in the borough and would seek to include EV infrastructure as a standard feature.

4c) Embed the rollout of chargepoints into programmes such as mobility hubs and other relevant LIP schemes.

As referenced in action 1f, the borough is delivering other transport workstreams as set out in our Local Implementation Plan. The delivery of our chargepoints will be embedded into this wider work. Chargepoints will be considered as part of any potential mobility hub and by July 2024 all CPZ consultations will include locations for new chargepoints as standard so that the local community can have their say on where they are located.

4d) Update this strategy by the end of 2026

As the field of EV infrastructure is developing all of the time this implementation plan covers a three year period from 2023 – 2026. It will be reviewed and updated by the end of 2026 setting out how EVI will be installed from 2027 onwards.

5 Appendices

5.1 Town centres in Lewisham

Town Centre	Classification	Night time economy classification
Lewisham	Metropolitan	NT3
Catford	Major	NT3
Deptford	District	
Downham	District	
Forest Hill	District	
New Cross and New Cross Gate	District	NT3
Sydenham	District	
Blackheath	District	NT3
Lee Green	District	

5.2 Appendix B: Lamp-column Chargepoint location guidance

Lamp-column chargepoints primarily serve residential or business users with no-off street parking and are designed for overnight or long-term charging. This guidance is intended to be used by the chargepoint installer who will be surveying suitable lamp-columns. It sets out criteria we would like installers to consider when choosing columns to survey. A key consideration is choosing a location where an associated EV bay can be delivered alongside the chargepoint with the minimum of street clutter, in Lewisham all lamp-columns are installed at the back of footways for this reason.

In choosing the general location the aim has been to develop a network that ensures households without off-street parking are within a 10 minute walk of their nearest chargepoint.

Installers need to take account of where the borough's CPZ areas are.

Surveyors **must avoid** which are:

- Where footways are narrow
- Where there are double or single yellow lines on the carriageway (unless there are specific instructions to the contrary)
- Where there is a parking bay with a dedicated usage such as disabled, motorcycle loading bay etc.
- Where there is likely to be loading/unloading activity or parking/waiting that is difficult to enforce against such as very close to MOT garages, minicab firms etc

An ideal location would be one where:



- The parking bay is for residents and business permit holders, or a shared use resident P&D bay
- It is on a side wall of a property because the parking pressure is likely to be lower.
- The column could serve 2 parking bays.
- The column is close to the end of parking bays as an EV bay can be added without the need to install additional poles to carry the signage.