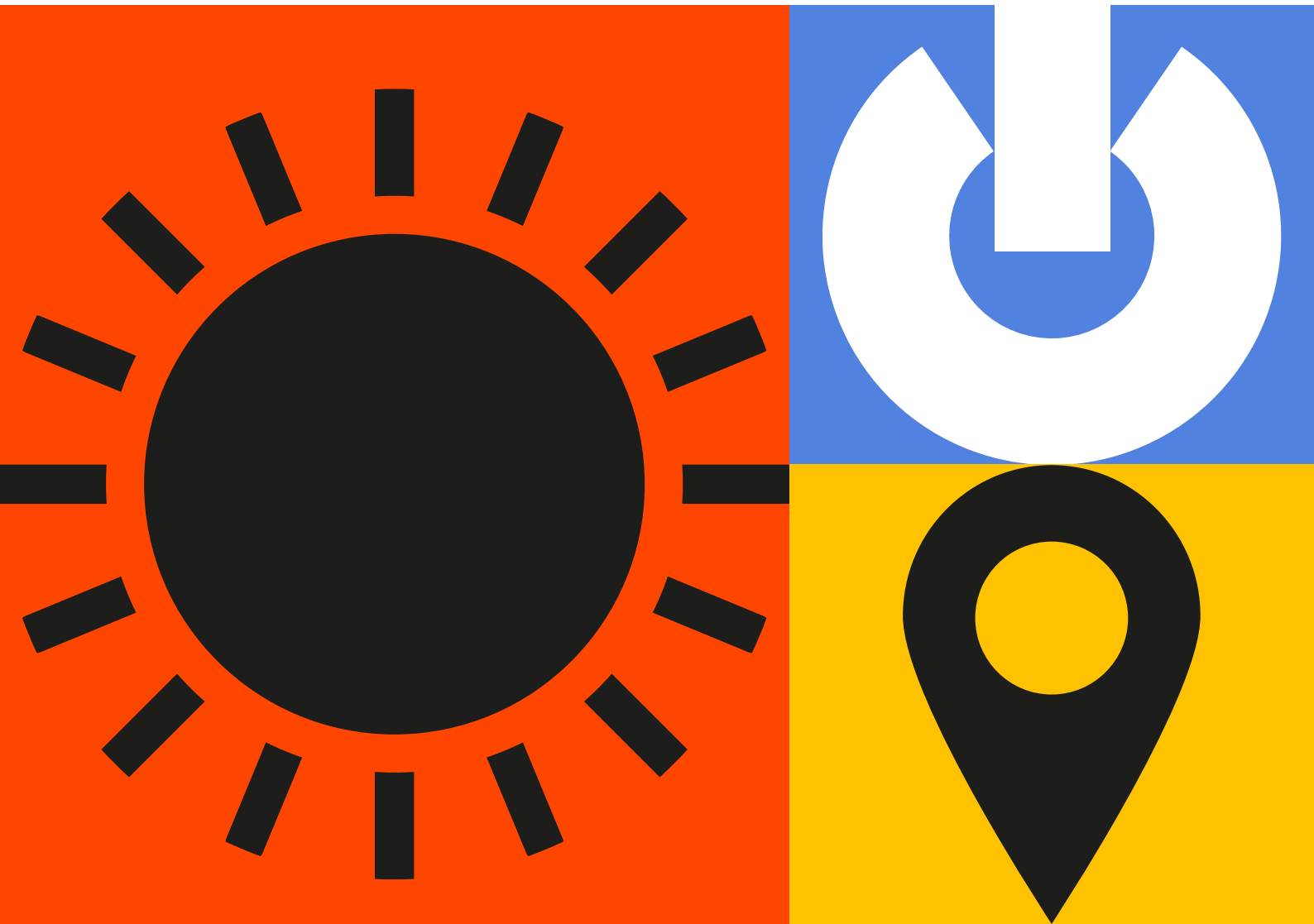
STONEHAVEN

ELECTRIC LONDON

SECURING A CLEANER AND FAIRER FUTURE THROUGH THE EV TRANSITION

May 2025



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SUMMARY

London has a history of leading transport revolutions: trains, buses, tubes, and ticketless travel have all come to London early. The rapid transition to electric vehicles (EVs) is no different: London is now leading the charge, not just in the UK but among cities across the world.

How can London maintain this momentum? London has more EVs per head than any other city in the UK, more drivers eager to switch, and a public charging rollout that is advancing at pace. It also has world-leading climate targets of net zero by 2030 and full transport decarbonisation by 2050. But the speed of uptake is slowing rather than accelerating.1 EVs are still not the natural choice for many Londoners—both residents and businesses. **Unless urgent action is taken, the transition will be neither smooth nor fair.**

London has delivered ambitious transport plans before. Mayor Sadiq Khan has defined his legacy by cleaning London's air and leading the city towards net zero. But this is a new type of challenge, raising important questions for City Hall: what incentives will lead Londoners to choose EVs? How do we make sure the transition reflects the way residents live, work and travel? Who is at risk of being left behind?

This paper seeks to answer these questions, outlining practical actions that City Hall can take now to make EVs the natural choice for the city's drivers. These recommendations are informed by the views and experiences of a wide range of Londoners — including businesses and residents— whether they have switched to driving an EV or not. It is clear that London still drives, whether it's those who ensure the delivery of critical goods and services or those who make essential journeys that public transport does not yet cover. **While Londoners understand that going electric will create a better city, the issues of cost, convenience and confidence still stand in the way.** Those we have interviewed, from EV industry experts and business groups to green transport NGOs and logistics businesses, confirm this.

We have identified three key areas of action: maintain city-level incentives; ensure equal access to affordable charging; and make EVs affordable for all.

1. Stonehaven analysis of Department for Transport (DfT) data table VEH0142—Vehicle licensing statistics data tables—GOV.UK

These actions are essential for the next generation of EV uptake and turning London's ambitions—on transport, health, growth and equity—into a reality.

Some of the actions identified, such as extending the Cleaner Vehicle Discount (CVD) beyond December 2025, are immediate choices about tools that are already cutting emissions across the whole of London. Others, such as unlocking home charging or opening up EV ownership to more people, are new ways to make electrification go faster. Together, these measures can unlock millions of pounds in EV investment, deliver cleaner air, protect early adopters from facing new costs, and help many ordinary Londoners save hundreds of pounds each year.

In 2025, London faces a choice about its electric future. It needs to keep up the momentum of electrification to secure its position as an EV world leader. **Decisions made over the coming months—some as soon as this summer—will determine the future of electrification and London's environmental progress, and whether Londoners are included in that transition or not.**



OUR THREE RECOMMENDATIONS

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MAINTAIN CITY-LEVEL INCENTIVES

Extend London's Cleaner Vehicle Discount

The CVD is due to be phased out on Christmas Day 2025, removing a uniquely powerful financial incentive to electrify. The CVD has contributed significantly to the rise in EV miles in central London, with the number of electric rideshare journeys by private hire vehicles in our sample alone increasing fivefold in just three years. The same opportunity is likely for vans in the near future as vehicle prices come down.

The CVD also has important implications for Londoners across the city, with **93% of air quality benefits driven by the CVD experienced outside of the Congestion Charge Zone (CCZ).**

With businesses, residents and commercial fleets still early in the process of transitioning to EVs, the removal of the CVD this year risks not just delaying London's EV progress, but reversing it.

Removing the CVD could drive an **8% increase in particulate emissions and an 11% increase in nitrogen oxides in central London**. Faced with over as much as £5,000 a year in new costs, EV drivers are even considering switching back to internal combustion engine (ICE) vehicles.

City Hall should urgently consult on extending the CVD in order to provide certainty for drivers ahead of the current expiry date.

Adopting this report's recommendations can:

- Cut central air pollution by 8-11%
- Save families without driveways an average of £600/yr, and professional drivers as much as £5,000/yr
- Make EVs the norm for London's roads, regardless of borough or bank balance



ENSURE EQUAL ACCESS TO AFFORDABLE CHARGING

Enhance access to home charging rates and plug infrastructure gaps

London risks a growing disparity in both access to charging and access to home charging rates, across boroughs.

For Londoners able to charge at home, residents can access charging rates as low as 7p/KWh. Those unable to charge at home and reliant on public charging points can face rates at least seven times higher. Over half of Londoners fall into the latter category, with residents paying at least £600 per year more as a result and professional drivers significantly more. Relative access to both home and public charging infrastructure differs significantly between boroughs, and risks a postcode lottery for charging across the city.

As three thousand new EVs are registered in London each month, addressing these infrastructure disparities will only become more critical, requiring action on three key fronts:

1. To enable greater access to home charging rates, London boroughs should prioritise applications for gullies and charging arms, bringing forward the Government guidance on cross-pavement charging issued in December 2024.

2. City Hall should engage central government to define a clear 'right to charge' so all Londoners can have access to home charging and the cheaper charging rates that come with it, wherever they live in the city.

3. To encourage quick planning and permitting decisions, Transport for London (TfL) should establish a centralised scorecard to track borough progress. Made publicly available, this scorecard would provide an early warning signal of where action is needed to keep pace, provide transparency for residents, and support planning for charge point operators.

MAKE EVS AFFORDABLE FOR ALL

Unlock EV options for lower income drivers and key workers

Many EVs on the market don't match what many Londoners want, need or think they can afford. Smaller, more affordable models are essential to a fair transition, but are only starting to enter the market: it will be several years before they reach the second hand market in large numbers.

To drive wider uptake, we need to provide access to these vehicles now. Social leasing schemes provide an effective way to do this and can be targeted to help key workers and low income families spread costs and switch earlier. Coupled with fairer charging, this becomes a commercial proposition.

We recommend that City Hall convenes industry and social enterprises to develop a city-level social leasing scheme.

ABOUT STONEHAVEN

Stonehaven is a consultancy working on major challenges in energy, transport and decarbonisation. In January 2025, we published our first paper focused on the EV transition—our Loose Connections report. This identified the need to move EV policy from support for early adopters to address the challenges of making EVs the natural choice of the average driver.

This paper builds on that question, seeking to find the policy measures that could deliver that shift.

We are grateful to Uber for their collaboration on this paper and for sharing information about their electrification progress. Almost 40% of Uber's miles citywide are fully electric. The mix of public and company incentives to switch have given Uber drivers particularly strong reasons to choose an EV, and have helped us to predict future London behaviour as EVs become more affordable.

This paper has also been written with the help and support of a number of people and organisations across industry, NGOs and government who kindly provided expert insights. These include:

BusinessLDN	Fastned	Members of Parliament
Campaign for Better Transport	Federation of Small Businesses (FSB)	Octopus EV
ChargeUK	Green Alliance	Sainsbury's
Clean Cities	Logistics UK	The Society of Motor Manufacturers & Traders (SMMT)

The findings are also informed by seven focus groups with London drivers including small businesses, private hire vehicle drivers and wider residents across boroughs. These interviews and focus groups were conducted by Stonehaven in February and March 2025.

2. Stonehaven analysis of DfT table VEH0105 and VEH0142—Vehicle licensing statistics data tables—GOV.UK
3. Stonehaven analysis of DfT table VEH0133—Vehicle licensing statistics data tables—GOV.UK

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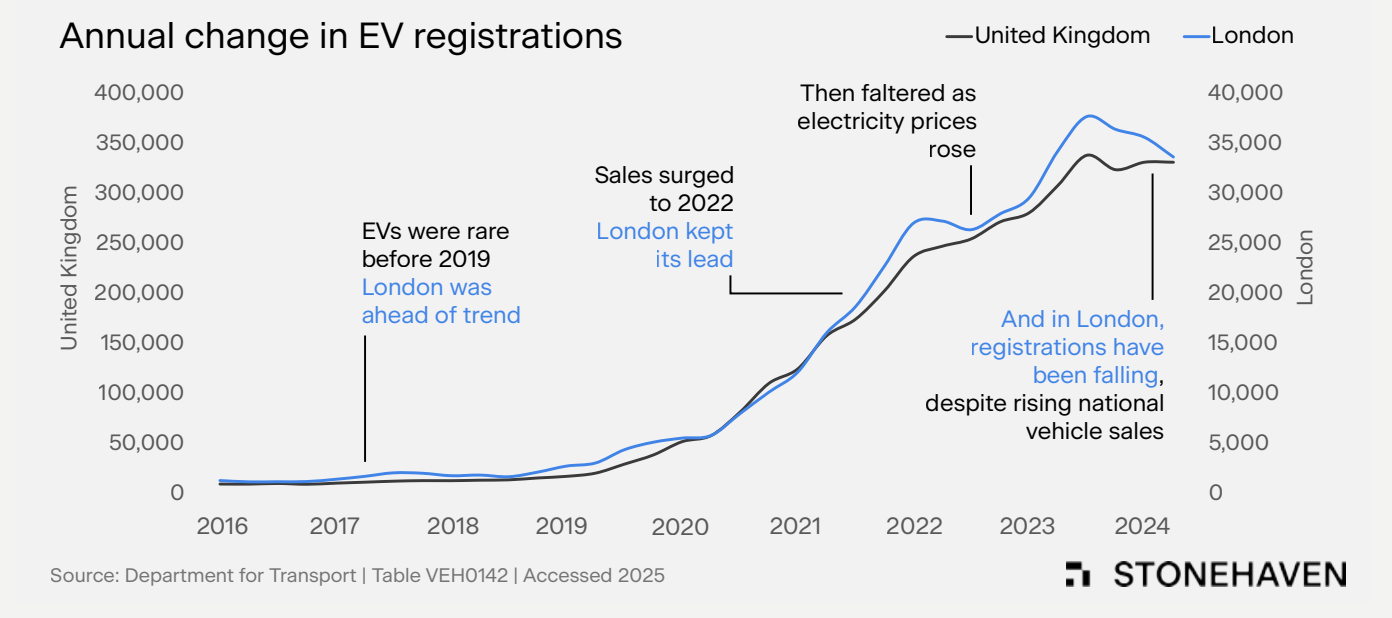
WHERE WE ARE TODAY

THE EMERGING CHALLENGE

The UK's electrification journey has seen remarkable progress over the last decade, driven by a range of financial incentives that have made EVs viable at scale for the first time. Today, there are over 1.1 million battery-powered EVs on the UK's roads, plus a further 700,000 plug-in hybrids.[2] Together, they account for almost 5% of registered vehicles. This is an incredible transition over the course of a decade: at the start of 2015, policymakers were heralding 'revolutionary' uptake with 30,000 EVs on the road. So far in 2025, the number of EVs on the UK's roads has grown by 40,000 a month.[3]

This shift was supported by a suite of policies, primarily at a national level, aimed at showing that EVs were viable. These included financial incentives for first-time EV buyers, tax exemptions for motorists and businesses, and investment in early charging infrastructure. These policies succeeded in turning EVs from a theory into a real world transport mode.

Now, government requires car and van makers to end the sale of diesel and petrol cars by 2030. What was previously an option for the enthusiastic will become a requirement for everyone. This makes for a very different challenge—for politicians, for industry, for business, and for tens of millions of ordinary people. **Policymakers now need to make EVs work for everyone, not just for early adopters**.





LONDON—WHERE CHANGE IS FASTEST

London has been at the forefront of the transition to EVs. By mid-2024, EVs accounted for more than a third of new cars being registered and 5.4% of cars on the road.[4] The city also currently hosts 30% of the UK's public charging points.5 61% of London's drivers own or are considering an EV for their next car - compared to a UK average of 38%.[6]

The switch to electric vehicles has been supported by two unique local policies:

- **The Cleaner Vehicle Discount (CVD):** encouraging early adoption by waiving congestion charge fees for registered EVs.

- **Ultra Low Emission Zone (ULEZ):** a substantial-charge on older vehicles that do not comply with recent emissions standards, from which cleaner new vehicles are exempt.

These are among the biggest and most significant measures of their kind in the world, and the CVD in particular offers a financial benefit to going electric that almost no other city has.

London is famous for its public transport network, and the Mayor's 2018 Transport Strategy set a goal of having 80% of journeys by walking, cycling or public transport by 2041. However, London's cars and vans will continue to be a major part of the city's daily life due to their crucial role in logistics, blue light fleets, business, shared transport (e.g. private hire) and essential private journeys. Going electric is therefore crucial to securing the Mayor's legacy—notably his targets of hitting net zero by 2030, and decarbonising London's transport completely by 2050.

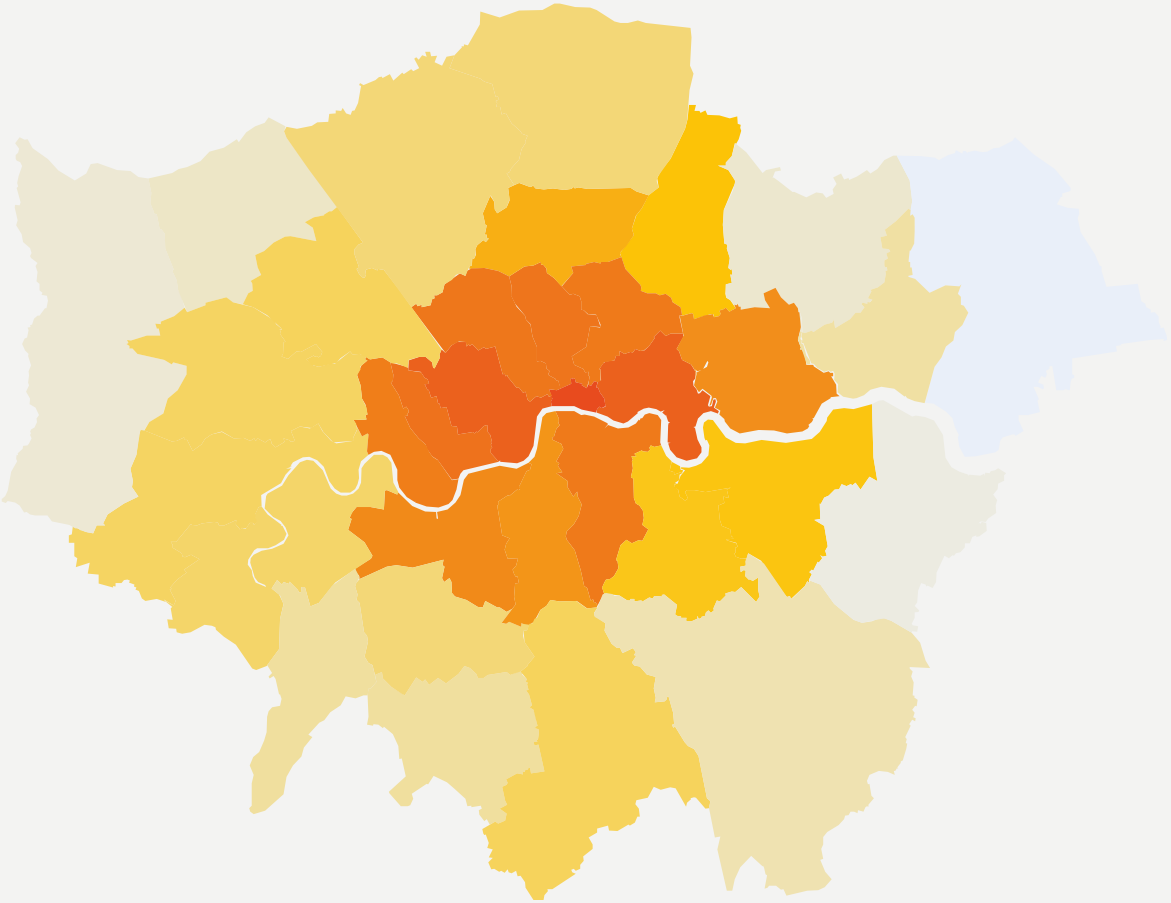
London faces particular challenges that make the journey to electrification harder. The RAC Foundation has found that 57% of London houses have no potential for off-street parking. This is made more acute by a larger proportion of rented housing stock, where installing a chargepoint is more complex.

This means that Londoners are particularly exposed to the gap between home and public charging prices. For Londoners with a driveway, it is possible to charge up overnight for less than 7p/KWh. For those without, it will be around 80p/KWh for rapid charging and 52p/KWh for slow/fast charging.[7] This inequality in pricing will be felt by millions.

That question of fairness looms larger in London than elsewhere. Debates around the ULEZ and the introduction of Low Traffic Neighbourhoods (LTNs) have made London's politicians aware of how sensitive citizens are about what happens on their roads.London has opportunities to act, a population willing to do so, and a globally-respected transport authority able to lead the response. That means what is solved in London can provide answers for all.

4. Stonehaven analysis of DfT table VEH0105—Vehicle licensing statistics data tables—GOV.UK
5. Zapmap, 'EV Charging Statistics', April 2025—EV charging statistics 2025—Zapmap
6. Stonehaven polling, November 2024.
7. Zapmap, 'Zapmap Price Index', April 2025—Zapmap Price Index—Average weighted price to charge on the public network - Zapmap.

Proportion of houses where off-street parking is impossible



Data source: RAC Foundation

“

Going electric is therefore crucial to securing the Mayor’s legacy—notably his targets of hitting net zero by 2030, and decarbonising London’s transport completely by 2050.



LONDON AT THE WHEEL

To maintain London's EV momentum, we need policies that reflect the motivations and needs of the city's drivers. Many rely on cars for their livelihoods—for getting to work, accessing services, or the essentials of daily family life. However, EV policies often treat drivers as a uniform group, overlooking key factors such as home ownership and driving mileage, which significantly impact EV adoption.

To understand how motivations and concerns differ, we conducted focus groups with three key driver groups: ordinary London residents (both inner and outer boroughs)8, small business owners, and private-hire vehicle drivers, including both EV and ICE users.

These groups are often underrepresented in public discussions but they all play a critical role in EV adoption. To deliver a smooth and fair transition to EVs, effective city policies must be designed and communicated with their priorities in mind.

INNER LONDONERS

Inner London is often seen as wealthier and therefore more advanced in EV adoption, but only four boroughs and the City of London are leading the way, with the other nine lagging behind. Most residents rely on a mix of public transport, cycling, and occasional driving, though some—particularly key workers—depend on cars for work-related travel. Limited charging access due to the lack of driveway parking continues to make EV adoption challenging for these drivers.

> "I cycle, hop on the train, and drive. It depends on the situation. If I'm heading somewhere awkward to get to, or really far away, then I'll drive. If I've got to take my kids anywhere, then I drive because it's easier with kids."

8. Inner and Outer London groups were recruited based on the following information from City Hall: Annex 2—Inner and Outer London Boroughs | London City Hall



“

When children come into A&E, I have to get there within an hour. If I was to rely on public transport, I may not get there within that time. Whereas if I get in my car, I’ll definitely get to that hospital within an hour.





“

I drive because I have to visit clients in their homes. It’s the easiest, fastest, and most comfortable way for me to work.

OUTER LONDONERS



In Outer London, cars are more essential due to limited public transport. EVs are a smart investment for those with driveways and home chargers, but many still lack this option. Affordability remains a major barrier, especially in more deprived areas with lower uptake.

> "If you've got home charging, you just plug in at night and that's it. No queuing, no waiting around. It's just part of the routine, like charging your phone."

> "The cost of charging at home is very, very cheap actually. We live in a house with a drive and a charger, so it's easy for us."

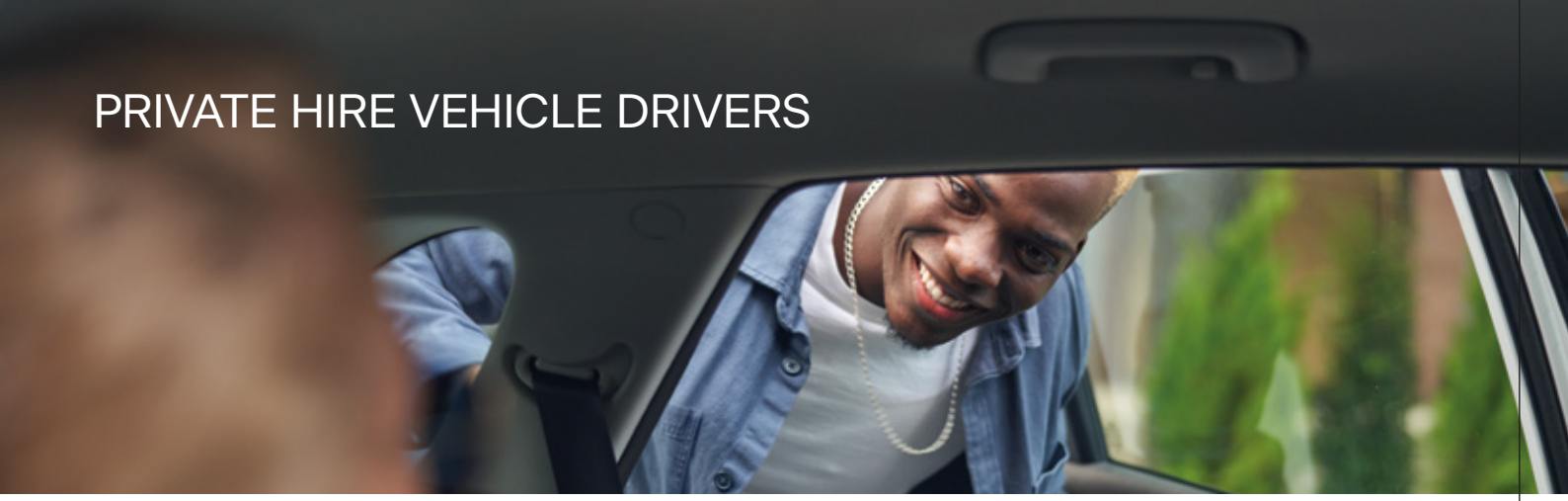
> "I have on-street parking, so I can't guarantee where I park. That means I can't guarantee where I'd charge an EV either."

"

I don't think you're allowed to run a cable across the pavement, so I wonder what the solution is for many like me.



PRIVATE HIRE VEHICLE DRIVERS



PHV drivers have embraced EVs for cost savings, benefiting from financial support from some PHV operators and city incentives like the CVD. High mileage makes fuel and maintenance savings crucial, but charging access remains a challenge for many. The end of the CVD in 2025 could cost EV drivers who use the CCZ every day over £5,000 a year, fuelling reluctance among those with the potential to switch and making those who have already gone electric consider going back to petrol or diesel.

> "I saved £32,000 in six years driving an electric vehicle."

> "Finding a charging place is a worry, and if it's not the fast kind, you have to stay there for hours or take a break you wouldn't otherwise take. That's money lost."

> "For personal use, I'd go hybrid, but for work, stopping to charge means losing money. That's not sustainable."

"

They waived the congestion charge for EVs before, and now they're saying we'll have to pay. They can change their mind whenever they want.





SMALL BUSINESS OWNERS

Small business owners rely on vehicles, but electric vans are costly and scarce. Charging is also a practical challenge since vans serve as mobile storage and must stay on-site. Heavier loads mean batteries run down more quickly. Many in this group feel overlooked and misled by policymakers, with the removal of incentives like the ULEZ scrappage scheme and the CVD reducing the will to go electric.

> "A customer noticed I was driving an electric vehicle and commented on how good it was to see businesses making the switch. I never thought people would care, but it does leave an impression."

> "I came close to switching when they had the £10,000 scrappage scheme, but that disappeared quickly. Without something like that, it's just not realistic."

> "Most of my jobs are in residential areas—there aren't charging hubs there. It needs to work everywhere, not just in high-traffic zones."

> "No one's asking businesses like mine what we need. They assume we'll figure it out, but I can't just take a hit on costs like a big company can."

"

If you take away all the financial benefits, it's just about ethics—and a lot of people will choose to feed their kids over saving the planet.



UNIFYING THEMES

While the benefits of switching to EVs are often clear, cost barriers, charging accessibility, and policy uncertainty continue to deter many Londoners—and there is a real risk some EV drivers will switch back. Our research identified three key themes that should shape London's next phase of EV policy:

01

COST IS THE KEY CONCERN, including purchase, charging and city costs like the CVD: Many still perceive EVs as the more expensive option. While up front purchase price remains the most pressing issue across the board, cost concerns do not stop there. For many business drivers, the imminent removal of the CVD was a critical factor, as it can affect their take-home pay by thousands of pounds. For those without access to a driveway, charging costs were also key.

02

INFRASTRUCTURE MATTERS: Chargepoint availability and reliability remain major concerns, especially for those who rely on their vehicles for work. Expanding home charging, building community hubs, and improving public charging infrastructure are all potential solutions, but they need to be tailored to drivers' real-world experiences. There is also a policy and communications challenge in bridging the gap between the perception and reality of public chargepoint availability, with both real and perceived disparities across areas of the city.

03

A NEED TO BUILD TRUST: Many London drivers—particularly small business owners and PHV drivers—feel that the shift to EVs is being shaped without them. Their concerns about affordability and impractical infrastructure are not yet fully addressed, undermining confidence and buy-in. City incentives like the CVD and the van scrappage scheme are seen as temporary or liable to change, and more broadly they are worried that the advantages of investing in an EV are not guaranteed. Building trust through consistent, inclusive, and practical policy—tailored to the realities of everyday drivers who prioritise functionality and affordability—is essential for a fair transition.

“

There is also a policy and communications challenge in bridging the gap between the perception and reality of public chargepoint availability...



LONDON LEADING THE CHARGE: KEY ROUTES TO ELECTRIFY LONDON

To keep London on the path to rapid electrification, we have identified three key areas for action:

01

MAINTAIN CITY-LEVEL INCENTIVES:
Continuing to use the levers that help motivate drivers to switch

02

ENSURE EQUAL ACCESS TO AFFORDABLE CHARGING
So charging is cost effective and convenient

03

MAKE EVS AFFORDABLE TO ALL
Avoiding the purchase price of an EV becoming a barrier



01. MAINTAIN CITY-LEVEL INCENTIVES



Going electric is one of the biggest decisions a motorist will make. Consistent evidence that EVs receive positive treatment in the city's rules, regulations and charges help people decide to buy an EV. City incentives can include:

- Exemptions or reduced ratesfor tolls or congestion charges.
- Providing access to cheaper or more attractive parking spaces for EVs.
- Allowing access to locations that might otherwise be off-limits, such as bus lanes, Low Traffic Neighbourhoods (LTNs) or zero-emission zones.

This is particularly relevant for those who drive for business. For individual drivers, a vehicle is an earning asset, and the potential to incur fees will determine how much money they take home. For fleets, going electric can be a way to improve productivity and to hedge against future regulatory changes.

A driver in London could save up to £5,000 a year from the Cleaner Vehicle Discount (CVD)—enough to make a rational driver switch when they otherwise would not, especially those that drive high mileages.

To test these impacts, we did a deep dive into London's PHV fleet, and the effects of the CVD on their behaviour.

Since 2021, the proportion of journeys undertaken by electric PHVs in the Congestion Charge Zone (CCZ) during active hours has increased from 20% to 51%. Only 12% of private car miles in the central area are driven by EVs.[9]

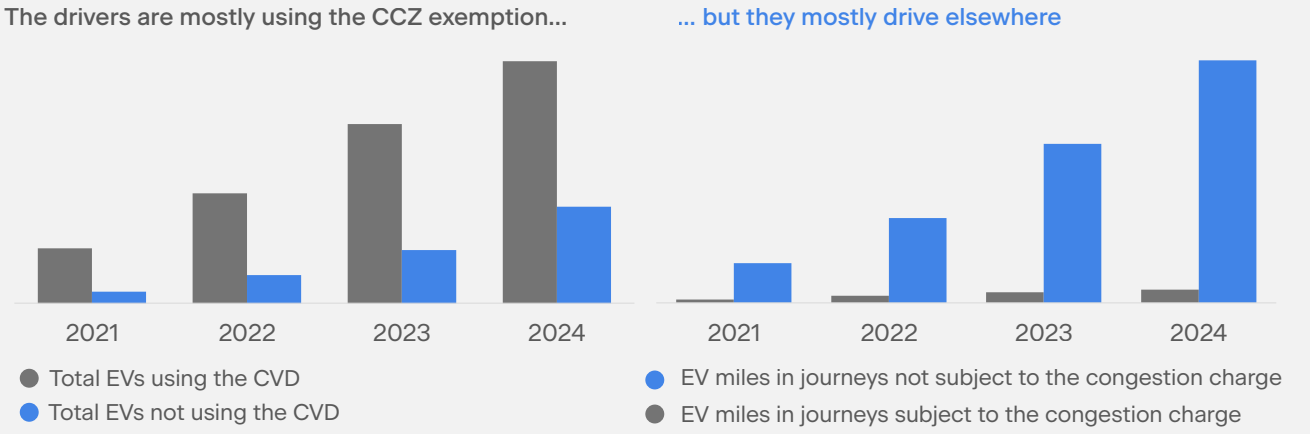
70% of electric PHVs in the sample make use of the CVD. Because these EVs tend to take more trips than non-EVs, this means trips in the centre of London that would have been completed by up to 17,000 petrol and diesel vehicles are instead being completed by 12,000 EVs.[10]

PHV drivers in our sample are switching to electric vehicles 75% times faster than the rest of London's car fleet.[10] As PHVs are used far more intensively than private vehicles—and often replace multiple private car trips— the shift to electric within this segment has a disproportionately positive impact on emissions and air quality.

93% of clean air benefits from these electric vehicles are provided outside of the CCZ, bringing clean air benefits to the whole city.

9. Stonehaven analysis of data obtained through TfL FOI 3942-2425
10. Stonehaven analysis of Uber data and Stonehaven analysis of DfT table VEH0105

Private hire EV drivers are mostly using the CVD



Source: Uber data

STONEHAVEN

This last point is significant: the congestion charge is thought of as a measure that mainly influences whether people choose to drive into central London. But by tying the CVD to electrification, drivers are incentivised to make changes to every mile they drive. If a PHV driver wants to take fares anywhere in the city, going electric gives them this freedom. If a fleet operator wants their vans to be able to go everywhere on equal terms, they will need to turn their whole fleet electric. Whatever the motivation, the changes they make to get access to the CCZ apply at all times, and in all places.

This shows that electrification has made an old incentive—the congestion charge—work in new ways and deliver surprising outcomes. **Although originally designed to tackle congestion in central London, it is also an influential tool in electrifying London's vehicle fleet and providing environmental and health benefits across the city.**

ACTION: EXTEND THE CLEANER VEHICLE DISCOUNT

The CVD continues to be a uniquely powerful incentive for EV adoption in London, but is due to end on Christmas Day this year. Originally, the Mayor's Transport Strategy anticipated that a zero emission zone would come into effect in the centre of London when the discount expired, meaning that electric vehicles would then enjoy exclusive access to central London—and crucially, a strong incentive to drive an EV would remain. But with TfL confirming there



> "There's a clear business case for going electric. But it feels like businesses aren't being adequately rewarded for making the right choice – investing in EVs and supporting the green transition. We need to maintain stronger incentives to encourage this shift and level playing field with ICE vehicles.
>
> **— Trade Association**

are no current plans to introduce the zero emission zone, there are real concerns that, in the words of one environmental campaigner, 'the final incentives [supporting electrification are] being unpicked'.

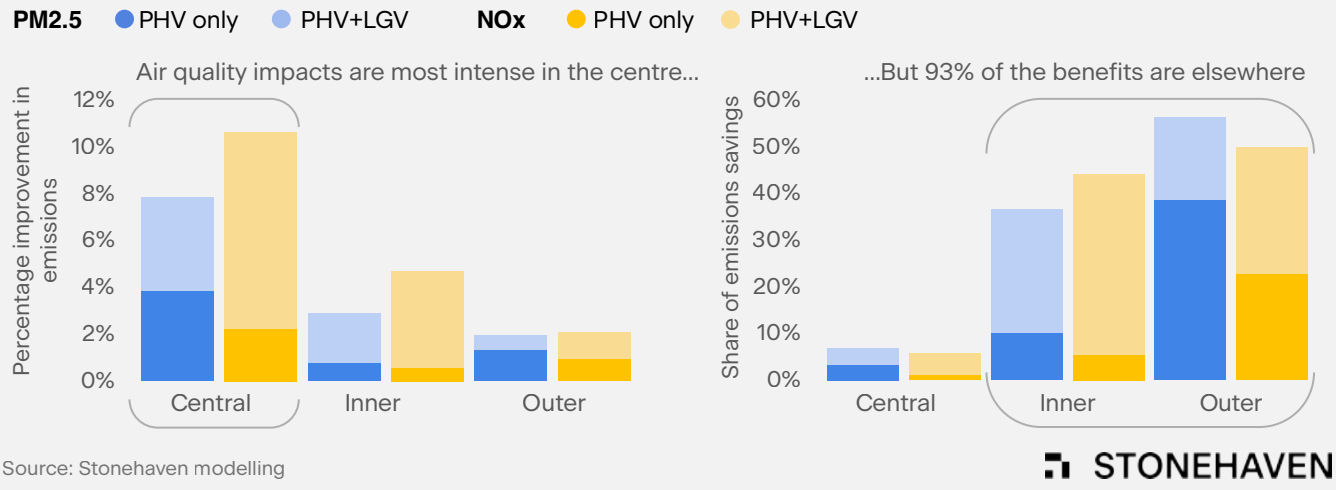
The CVD is working, but still has more to do. Stakeholder groups across the board, from business groups and NGOs to political stakeholders and chargepoint operators expressed concerns **that the phase out of the CVD will remove a key financial motivation to switch. It will mean the switch to EVs will slow or even start to reverse.** In particular, stakeholders see it as premature when many businesses, fleets and individuals are yet to commit to electrification. This is particularly true for vans, where recent TfL data shows that 89% of van miles in the CCZ are still diesel, and are yet to shift at scale.[11] And it is still true of private hire drivers where, despite great progress, well over half are yet to switch.

EXTENDING THE CVD CAN CONTINUE TO DELIVER A CLEANER LONDON BY:

Providing an ongoing incentive for fleets and individuals to switch, in particular to shift London's vans from diesel to electric and to ensure PHV EV momentum is maintained.

- Encouraging drivers to choose EVs to access central London in a way that sees 93% of benefits for air quality and carbon emissions felt elsewhere in the city (see Figure: Projected average annual improvement in air pollutant emissions).
- Sustaining the rate of EV progress and preventing backsliding to ICE vehicles.

Projected average annual improvement in air pollutant emissions if the CVD is extended (2025-2030)



Source: Stonehaven modelling

STONEHAVEN

There are also consequences to removing the CVD. Our modelling suggests that EV share of PHV traffic (BEVs only) in the area of the congestion charge will immediately drop 27% if the CVD ends—handing this market share back to petrol and diesel vehicles.[12] Coupled with a slower rate of van uptake, this could **increase annual emissions of NOx and PM2.5 in central London by nearly 11% and 8% respectively over the late 2020s.**

The shift in incentives means we expect some high-mileage EV drivers to switch back to petrol and diesel vehicles.

PHV drivers without access to home charging can be paying more for fuel than ICE drivers, and they also have to accept downtime for recharging. Polling shows that 43% of electric PHV drivers are considering switching back to ICE vehicles if the CVD ends.[13] Similarly, wider stakeholders raised concerns over the ability of small businesses to justify the costs of retaining an electric van. **In order to avoid the unintended consequences of removing the CVD this year, City Hall should urgently consult on extending the scheme to provide certainty for drivers.**

11. Stonehaven analysis of data obtained through TfL FOI 3942-2425
12. Stonehaven analysis of Uber and TfL data
13. Uber polling

Fleet change by vehicle type across central, inner and outer London, 2019-2024

PHVs

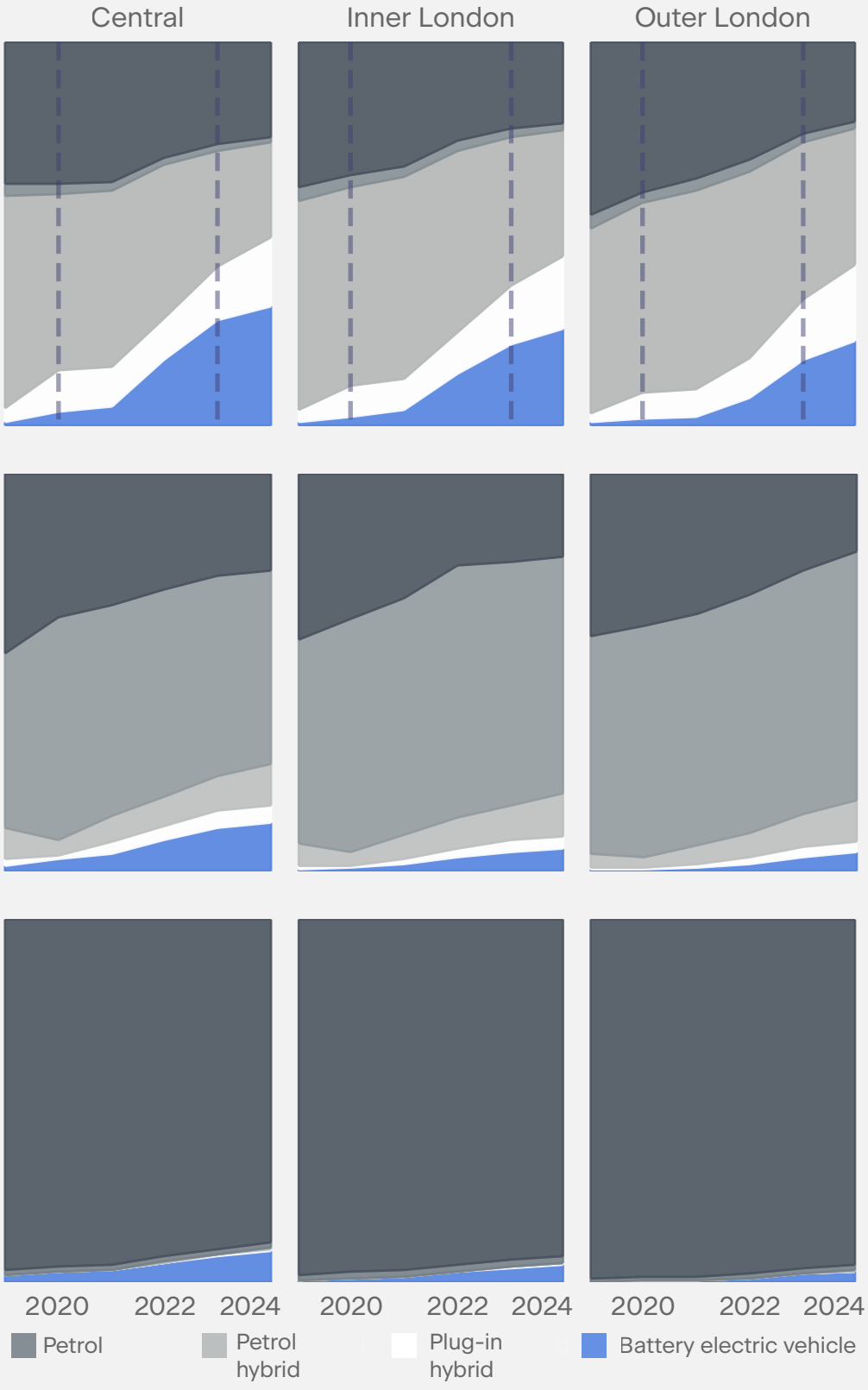
Private hire vehicles have had an incentive to switch because of the CVD. The CVD was limited to battery electric vehicles only in October 2021, and the proportion of EVs went from 5% to 23% in twelve months. This trend appears not to be driven by emissions standards for new PHVs that went live in 2020 and 2023 (blue dotted lines).

Cars (excl. PHVs)

Private cars are switching too. Incentives are less impactful, but the proportion of BEV miles in the centre is double elsewhere.

LGVs

Electric vans are still more expensive than their diesel equivalents, and city incentives aren't yet outweighing this at scale. Switching is picking up, starting in the central area. A 2% fleet shift is £240m of green investment.



Data source: Transport for London



02. ENSURE EQUAL ACCESS TO AFFORDABLE CHARGING

London has a growing network of public chargers, but does not yet provide equal access for its residents. Without action, there will be serious disparities in cost and infrastructure across boroughs.

ADDRESSING UNEQUAL ACCESS TO HOME CHARGING

The price of petrol is one of the most sensitive in the whole economy and the difference in the price of charging an EV has high potential to become a key political issue. The cheapest charging for EVs is currently less than 7p/KWh; the highest is more than £1.

On-street rates for slow chargers vary, with the cheapest non-subscription price currently around 50p.[14] The lowest rates are only guaranteed to those who own their own driveway.

That means they are not available for the 40% of Outer Londoners and 80% of Inner Londoners without one. For some people, going electric is far cheaper than driving a petrol or diesel vehicle; for others it is currently more expensive, even on a per mile basis (see Figure: Cost per mile of charging a typical SUV and a small car).

Home charging is, and will remain the cheapest way to charge a vehicle, at least in terms of visible per mile costs. This is not because of any negative practices on the part of chargepoint operators, but because of structural differences between the treatment of home and public charging.

14. Lower prices are available for drivers who pay a monthly subscription (potentially 40p/KWh), or who get access through a group rate (we are aware of 29p/KWh being offered); and the purchase arrangements for some vehicles include 'free' charging.



> "We need to see as many measures as possible to ensure we maintain a supply of electric vehicles on the road. We'll do our bit. But as a business, we won't be able to preserve our rate of infrastructure deployment and develop at a fast pace if the rate of growth slows down.
>
> **— Chargepoint Industry**

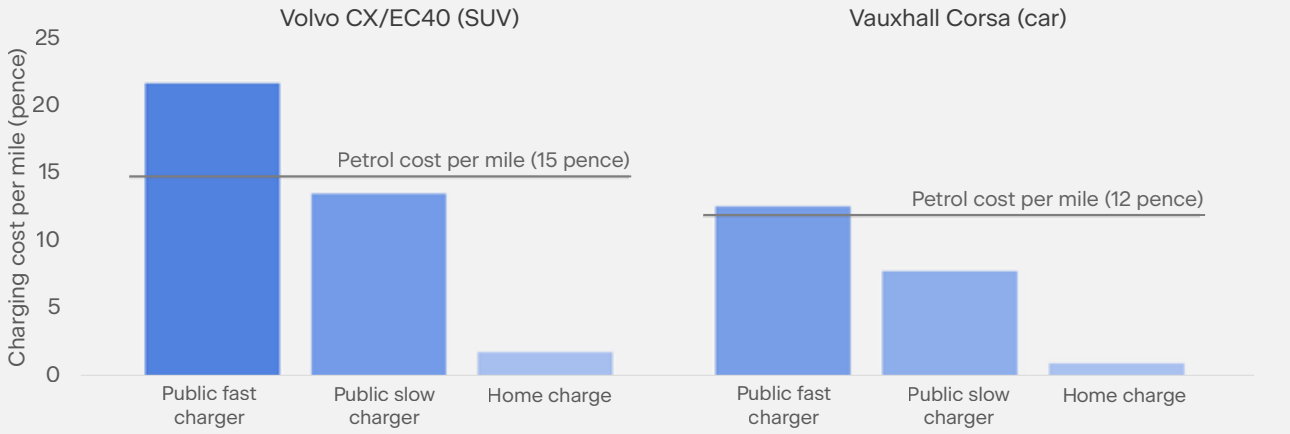
- Domestic energy is charged at 5% VAT while public chargers pay 20%.
- Wholesale prices are lowest in the middle of the night, when there is a large surplus of wind energy. The domestic electricity market has already begun to shape itself around this opportunity with a range of off-peak car-charging plans, though this cheap rate is harder for public chargepoints to offer without a driver occupying a charger overnight.
- Homeowners further defray their own costs by paying for their own charge-point, meaning that their 'per mile' cost hides the capital cost of installing the connection.
- Public charge points are required to paystanding charges, which add significantly to their fixed costs.
- Unlike their European counterparts, UK chargepoint operators do not benefit from being included in the Renewable Transport Fuels Obligation.
- Domestic prices are more tightly regulated in order to protect consumers, particularly during times of crisis.

This is a source of dissatisfaction for residents and a source of political risk for leaders. Inasmuch as it prevents people from switching to an electric vehicle, it is also a risk for carmakers. Even chargepoint operators (CPOs) who provide public chargers want to see this issue addressed, as their business models rely primarily on the rate at which the EV fleet expands. If people stay away from EVs because home charging is not an option for them, everyone suffers.

In a city like London, the challenge is especially stark due to the limited access to off-street parking, and in turn, home charging rates. For instance, in Tower Hamlets and Westminster only 7% of homes have the potential (never mind the reality) of off-street parking (see Figure: Off-street parking access in London).[15] In addition, a higher proportion of rented houses also means that there are more barriers to installing a chargepoint on a driveway.

Furthermore, homeowners are liable for a cable laid across the road and many councils discourage or prohibit people charging at the kerbside in this way.

Cost per mile of charging a typical SUV and a small car



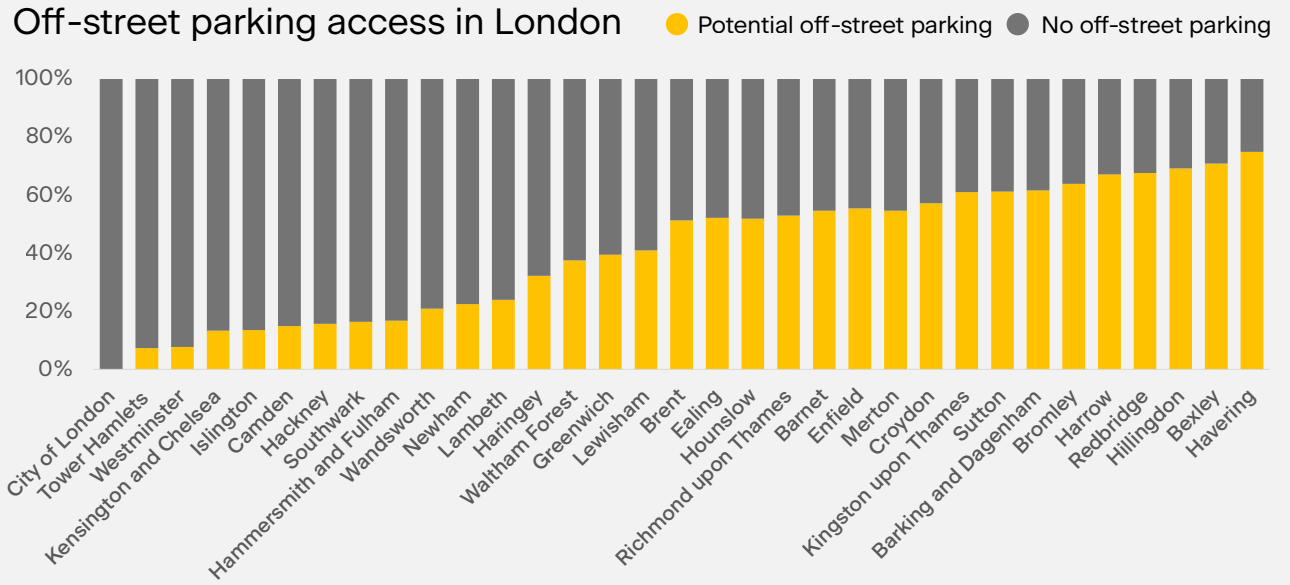
Source: Volvo; Vauxhall

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15. RAC Foundation, 'Standing Still', July 2021. Available at: Still standing still.

This is becoming clear in the data. Looking at the electrification of the PHV fleet, we find that the areas where EV adoption is lowest are inner London areas where driveways are scarce and houses are most likely to be rented. We also find that electrification rates of the PHV fleet are generally higher just outside of London than they are within, including in less affluent locations like Thurrock or Dartford.

This impacts all EV policy downstream. Stonehaven's polling found the cost and availability of charging is the most important factor in EV uptake for almost every category of person that we examined.[16] Without a promise of fairly priced charging, people will not go electric.



Source: The RAC Foundation

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16. Stonehaven polling, November 2024



> Under the current regime, the EV market is divided into haves and have-nots; Around 80, 90% of people buying EVs have a driveway or a dedicated parking area, which they can use to charge. Of course, that leaves a big gap to the "park on the street" have-nots who are simply not buying electric vehicles.
>
> **— Automotive Industry Stakeholder**

THE LIMITS OF CHARGING

We may already be seeing uptake hitting the limits of charging infrastructure in parts of London. East London is home to more of the city's PHV drivers than any other area. It also has older housing that is more likely to be rented—meaning that there is less home charging capacity. The result is a paradox—the areas with the largest absolute number of EVs have the lowest rate of electrification.

This suggests that drivers are prepared to switch, and able to do so, but a lack of suitable charging capacity may be holding them back.

Where driver presence peaks, the adoption of Zero Emission Vehicles falls

% of ZEV drivers Less than 25% 25-35% 35-45% 45%+ **Height scale by:** Number of drivers

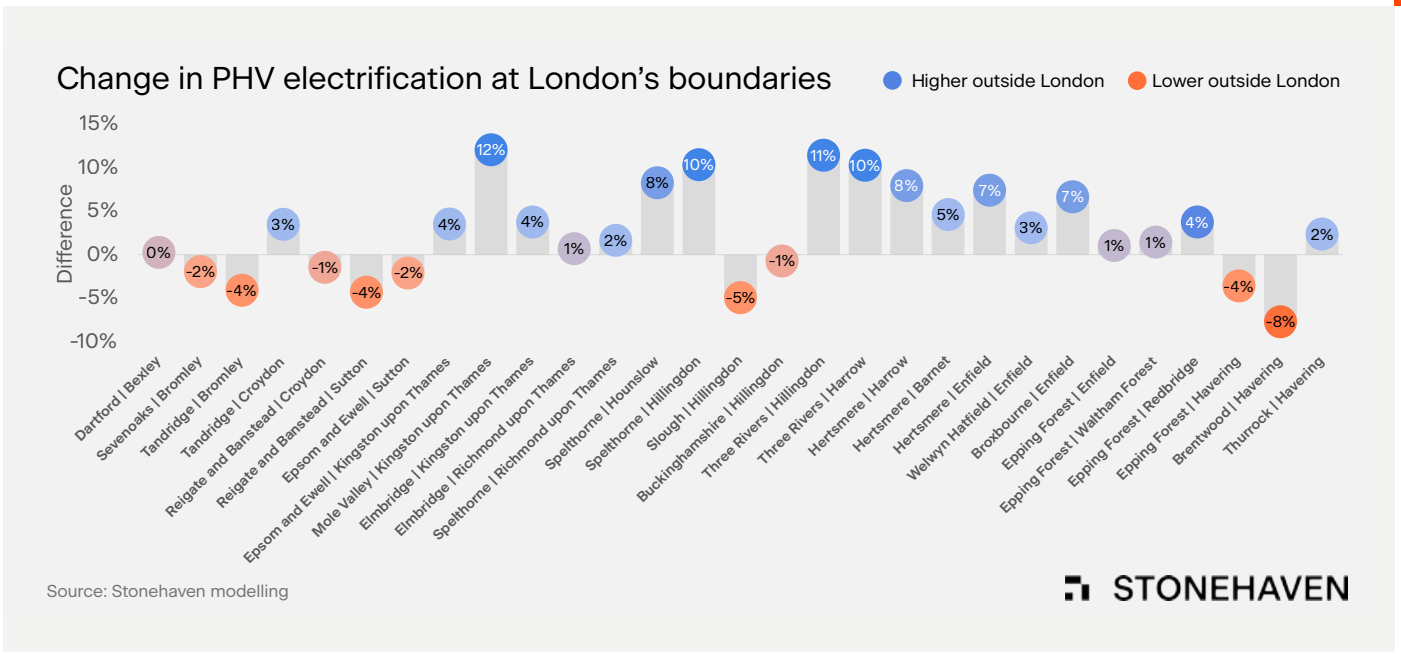


Source: Stonehaven modelling | This map is focused on constituencies in London and its surrounding regions, the East and the Southeast of England.

STONEHAVEN



> East London is home to more of the city's PHV drivers than any other area. It also has older housing that is more likely to be rented—meaning that there is less home charging capacity.



Source: Stonehaven modelling

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PLUGGING INFRASTRUCTURE GAPS ACROSS LONDON

In addition to unequal access to home charging rates, London risks an emerging postcode lottery in terms of access to public charging networks across boroughs.

Wealthier boroughs are seeing greater rates of infrastructure development, while other London boroughs are moving at different paces, impacting people's confidence to switch and the ability of city authorities to meet demand.

The dynamics influencing charging infrastructure development break down into three levels:

1. **Generation and grid:** Britain's power infrastructure is designed for the pre-renewable, pre-electrification era, and the connections are not yet built to take power from where it is generated to where it is needed.

2. **Charging sites:** it typically takes 2-3 years to get planning permission for a charging hub.

3. **Individual charge points:** installation of an individual street-level chargepoint requires planning permission.



> [Chargepoint strategies] do so much to affect the population that they need to be done on a very granular level that is extremely closely tied to the local communities and built in coordination with them. It can have such a big effect on people's lives that if it's not done at a real local level they will not be effective.
>
> **— City NGO**

For all of these, **the pinch points are generally not financing or installation, but official permission**, and the pressure is only set to increase as petrol and diesel cars are phased out. This could be as much as a 20% year-on-year growth in demand at its peak.

The challenge for city policymakers is therefore stark. **Over the next mayoral term (2028-2032) London could see half a million new EVs registered on its streets.**[17] Responsibility for handling this challenge will fall to local transport authorities as part of the English Devolution Bill, according to the government's recent White Paper.[18] Decisions made now will determine whether the infrastructure to support this is in place.

Private industry appreciates both the opportunity and the challenge; and charge point operators are building out a network of chargers scaled to serve the demand of tomorrow.

However, overall network coverage and delivery remains the responsibility of local authorities. **Gaps will appear in the public charging network, and filling them will require cities to handle the build-out of new charging hubs and chargepoints as fast as possible.**

To address these twin issues of access to home-charging rates and equal development of charging infrastructure across London, we propose two solutions: give Londoners a clear 'right to charge' and establish a centralised score-card to track electrification progress across boroughs.

A. UNLOCK KERBSIDE HOME CHARGING WHERE POSSIBLE

There is a common understanding that all drivers pay the same cost for fuel. This is no longer true in a world with an increasing number of EVs. A fair future for drivers therefore relies on targeted action to bring home charging prices to every home: at the local level, through the acceleration and prioritisation of gully charging, and at the national level, through establishing a defined 'right to charge' regime.

At current prices, achieving this is worth around £600/year for a typical car-owning London household (£1050/year nationally), and even more for high-mileage drivers.[19]

London Boroughs have a key role in making it easier for people without driveways to charge at home. In some cases, councils already allow people to install gullies for charging cables or arms that can carry a cable across the street, enabling vehicles to plug in to a home supply. Government published guidance on this in December 2024, highlighting how local authorities in England can develop policies about the safe and effective use of cross-pavement solutions, which boroughs can implement now.[20] However, getting permission from boroughs is slow, and fair access to home charging requires these solutions to be prioritised and expedited.

Boroughs need to implement government's 2024 guidance, enabling Londoners to install their own solutions for on-street home charging.

17. Internal Stonehaven modelling
18. Ministry of Housing, Communities and Local Government, 'English Devolution White Paper', December 2024—English Devolution White Paper—GOV.UK
19. Stonehaven internal analysis of DfT table TRA8905 and ONS table TS045 and charging prices—Road traffic estimates (TRA)—GOV.UK; Car or van availability—Office for National Statistics
20. DfT, 'Cross-pavement Charging Solutions for Electric Vehicles', December 2024—Cross-pavement solutions for charging electric vehicles—GOV.UK



> "A fair future for drivers therefore relies on targeted action to bring home charging prices to every home: at the local level through the acceleration and prioritisation of gully charging...

B. SECURE LONDONERS THE RIGHT TO CHARGE ATHOME RATES

But for many Londoners, especially those in flats and shared ownership buildings, there is currently no way to unlock home charging.

City Hall can be a leading voice on this issue, engaging central government to define a national 'right to charge' regulatory regime, applicable to all people regardless of their home and building type. The UK can learn from other EV leaders like Norway, where residents now have a right to install a charge point in places like a shared building's car park.[21]

A right to home charging in the UK could mean many things:

- A right to install a charging point outside of your house—either on shared property like a common car park or on the street itself.
- A right for renters to get a charge-point installed at their property.
- A right to run a cable across the street to your car, or to have an appropriate piece of infrastructure (a gully or an overhead cable) installed with the cooperation of the council.
- An ability to designate a particular slow charger or site as your 'home' for the purposes of overnight charging, in return for a membership payment to the charge point owner.

These options may sound simple, but they also raise complex questions for policy makers to resolve in order to avoid a future where only some people can easily switch to electric vehicles. For instance, a right to charge means defining what 'home' means, even if it is away from a main property; how responsibilities for chargers sit in different properties; and how infrastructure in the street can be made safe for pedestrians.

City authorities can push central government to make home charging available to everyone, giving them the toolkit they need to make EVs work on every street.

C. INTRODUCE AN EV SCORECARD

Few people appreciate the scale of the challenge that lies ahead, as London builds an entire new charging infrastructure for its citizens. One of the keys to faster uptake is understanding how and where the shortcomings in charging are most serious, laying the groundwork for effective action, and giving credit to those who bring about change.

21. Government of Norway, 'National charging strategy', January 2023—National charging strategy—regjeringen.no



"Few people appreciate the scale of the challenge that lies ahead, as London builds an entire new charging infrastructure for its citizens.

At heart, this is a question of data. **To address this problem, and drive action now, we need a comprehensive public scorecard to track local charging across London's boroughs, which city policy makers, civic leaders and residents can use to understand EV readiness and get more charging in place rapidly.**

This scorecard needs to go beyond reporting the number of public chargers and give a sense of the genuine readiness of areas for the challenges of going electric. The scorecard would track key metrics in each borough such as:

- The range of public and private charging options available;
- The number and power of public chargers;
- The potential for kerbside home charging;
- The speed with which applications for kerbside charging are turned around;
- The capacity available on the local electricity network;
- The expected and recorded turnaround time of planning applications for new public chargepoints.

The results of the scorecard would join together to show how well local infrastructure matches current and anticipated demand, providing a three-dimensional picture of whether London's streets are ready to go electric.

City leaders can use this scorecard to understand the challenges they need to manage and to demonstrate progress. Members of the public see how ready their area is to go electric, and chargepoint operators can use it to direct investment to where need is greatest.

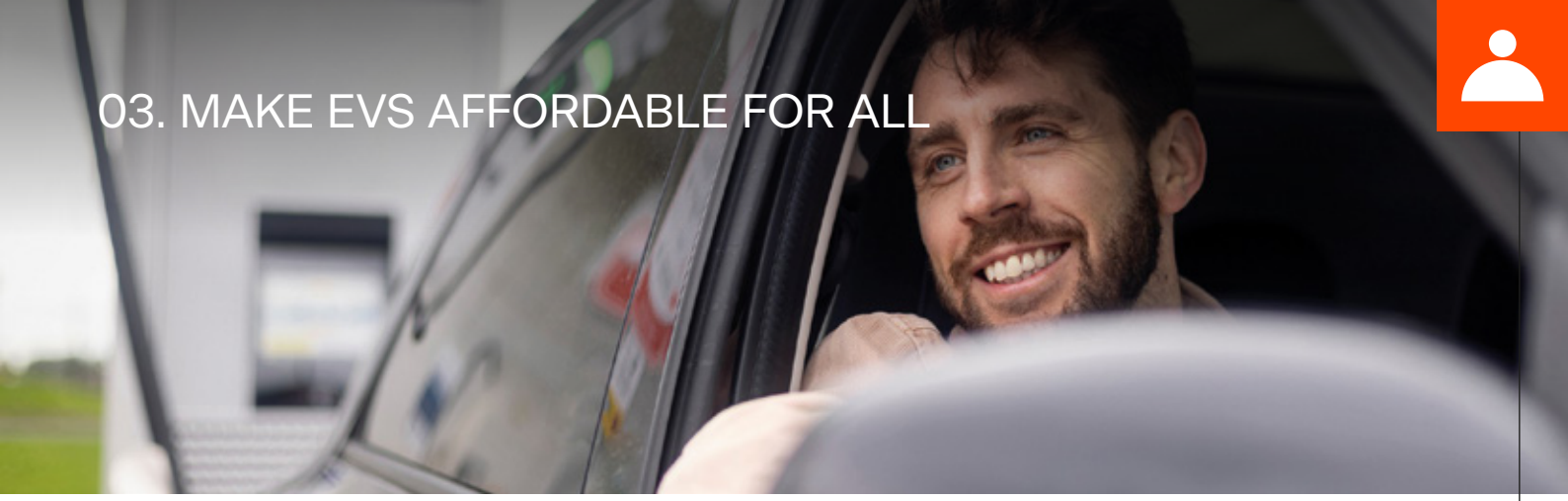
This would not be a one-off exercise: electrification is a live process. With 3,000 EVs arriving on London streets a month,[22] and the political case for action evolving in response, there is a need for regular reports on progress.

To be clear, a scorecard is not an end in itself. But by spelling out the **key considerations for communities, local charging infrastructure requirements and progress towards it, progress becomes accountable.** Actions can then become more targeted on the infrastructure that is needed.

22. Stonehaven analysis of DfT table VEH0132—Vehicle licensing statistics data tables—GOV.UK



> "Gully charging sort of solves that pavement issue. There is new DfT guidance on this, but there's nothing actually telling local authorities, "You need to consider this". You need to make sure that you have a policy and supply a solution for your residents.
>
> **— Green Transport**



03. MAKE EVS AFFORDABLE FOR ALL

If we assume that all of London's cars and vans will be electric by 2050, the vehicle fleet will need to meet all current needs. Each segment of the vehicle market will have its own transition, and their own challenges and opportunities to consider.

When car drivers get into their first EV will depend on the new- and second-hand markets. In that regard, 2025 looks promising. Cars bought in the surge of new EVs from 2019 onwards are now beginning to hit the second hand market in volume. For new cars, the first smaller EV models are now appearing, and will become available in larger numbers this year.

These EVs are much closer to what many Londoners think of as 'typical' cars. Whether smaller or older, they should make switching more affordable, more practical and more attractive. However, there is still more to be done. In particular, if smaller EVs are only arriving this year, they will not be appearing on the second hand market in substantial numbers until the end of the decade. Londoners will need as many as possible to meet the needs of all in the years up to 2030.

ACTION—PROMOTE SOCIAL LEASING

In principle, EVs should be the logical choice for lower-income families. The Social Market Foundation estimates that over a million people across the UK could be lifted out of poverty solely by the savings from EVs[23]. Some of the poorest families in Britain pay up to 20% of their income on car costs, and a cheap EV recharged at home charging rates would make a great difference to family budgets.[24] These groups usually cite purchase price as the key barrier; but in principle this can be resolved through leasing. In the right situation, the savings from cheaper fuel would more than pay for the lease costs.

A social leasing scheme for London could help those on lower incomes, particularly in the outer boroughs, to get behind the wheel of an EV for the first time. London could play a key role in pioneering this model across the country.

This does not need to be underwritten by a large-scale government subsidy: EVs are a commercial opportunity, and millions of households with potential access to home charging are unaware of how much they can save on fuel if they switch. Our polls show that 39% of low income respondents only change their car if there is no choice; but the analysis of the Social Market Foundation suggests the poorest 20% of households could save £800 a year in operating costs. Going electric can be an opportunity for them and for London.

Existing initiatives in the UK have brought more than 70,000 EVs to people who would otherwise be less likely to own them.[25] In France, a similar scheme has made subsidised leases available to households in the bottom 50% of incomes, who drive substantial distances or live more than 15km from their workplace.

City authorities can work to accelerate the emergence of this market. There are already opportunities around the nature of the ZEV mandate, as different kinds of activity to promote electrification produce 'credits' that offset the sale of non-ZEV vehicles and can be traded between car companies. Linking these to mayoral-backed leasing schemes, aimed at increasing the number of smaller EVs on the market, could allow

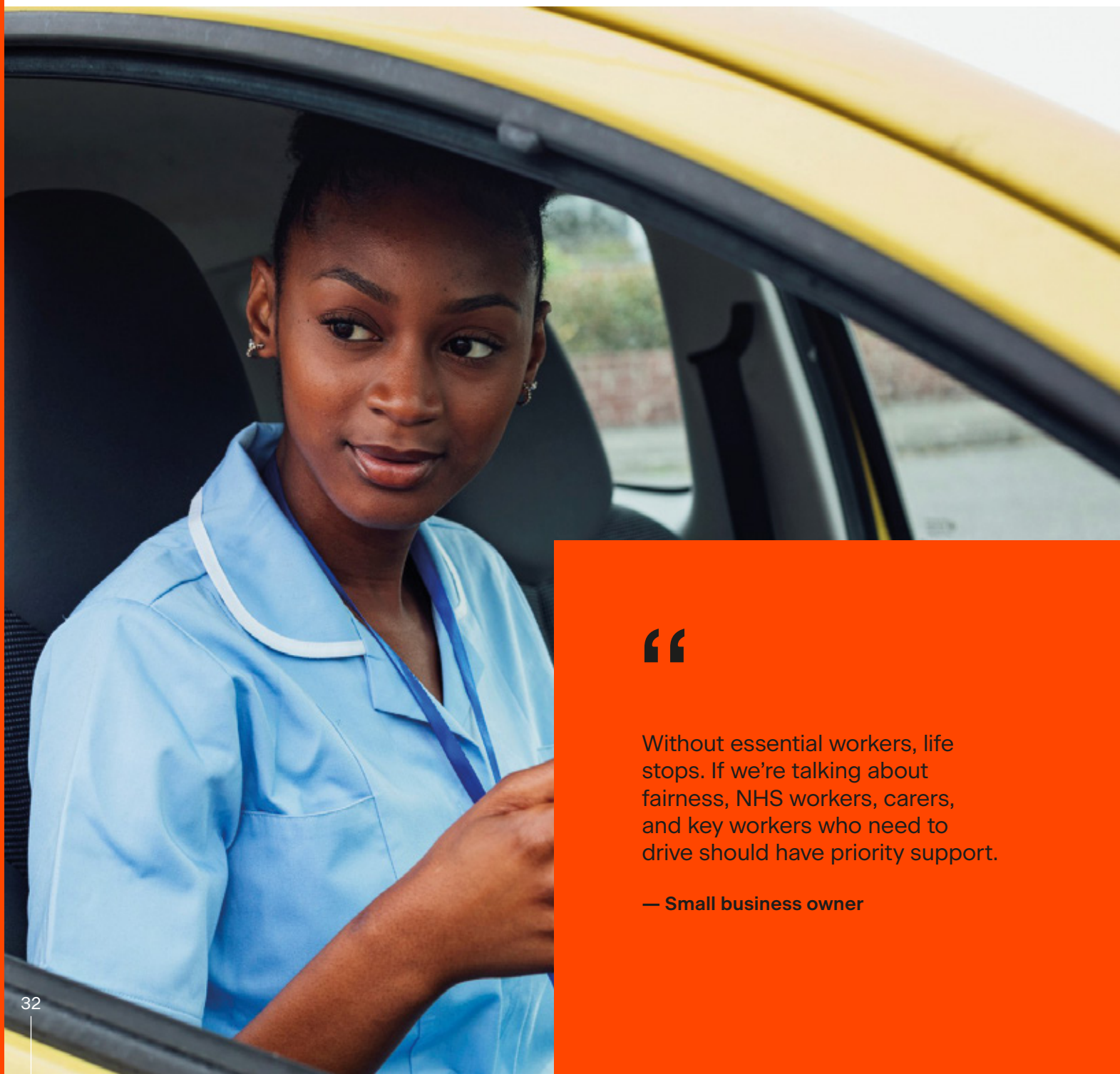
23. Social Market Foundation, 'Getting the Measure of Transport Poverty: Understanding and Responding to the UK's Hidden Crisis', November 2023—Getting-the-measure-of-transport-poverty-Nov-2023.pdf
24. https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/adhocs/15088householdexpenditureonmotoringforhouseholdsowningacarukfinancialyearending2021/hholdswcarsdisposable202021final.xls

for a self-financing social leasing programme. The attractiveness of leasing and its financial sense for the user can also be boosted by linking it to efforts to roll out charging in an area.

While leasing can be viable in its own terms, there is the potential to take such a scheme and magnify its social impact. For example, more favourable terms can be offered to households that agree to have only one car; or to those who agree to scrap the oldest and most polluting vehicles.

There is also the option of using a social leasing scheme to target key workers, such as NHS and wider public services, especially for those with a strong need to drive. Many NHS workers make house calls as part of their job or work nights, but are unlikely to benefit from a company car and the associated tax breaks.

25. Motability Operations Group, 'Annual Report and Accounts 2024', December 2024—Motability Operations Annual Report and Accounts 2024



> Without essential workers, life stops. If we're talking about fairness, NHS workers, carers, and key workers who need to drive should have priority support.
>
> **— Small business owner**

PATHWAYS TO ELECTRIFICATION ACROSS FLEETS

For London buses, there is a target to have the entire fleet electric by 2034. The models for doing this are widely available, and numbers of pure-electric buses have doubled in two years. This may be the first fleet to electrify in full. Company cars are switching in advance of the wider market, driven by favourable tax treatment; as are vehicles for motorists with disabilities purchased through fleet arrangements.

Vans are slower: only 3% of vans and 1.5% of private vans have gone electric. But when fleets shift they tend to shift in one go. Companies see the economic benefits of switching en masse through depot efficiencies and bulk order purchase deals from manufacturers, which are likely to be an ongoing incentive under current credit-trading arrangements in the ZEV mandate.

Heavy goods vehicles (HGVs) are recognised as one the hardest fleets to electrify, given both the cost of vehicles and the challenges of installing the necessary level of charging capacity at a depot—especially a rented site. London's HGV traffic is also heavily regulated, meaning that there is a particular importance to using regulatory incentives in an intelligent way.

Car clubs and car hire firms are heavily influenced by the zero emission mandate; but also have a challenge in convincing motorists to handle the novelty of an EV for a short journey and to manage the challenges of recharging.



"

The attractiveness of leasing and its financial sense for the user can also be boosted by linking it to efforts to roll out charging in an area.

CONCLUSION: CLEANER, FAIRER, FASTER

London has always led on transport innovation—and with EVs, it has another opportunity to stay ahead. But that leadership is under threat. While the city has more EVs per head than anywhere else in the UK and ambitious climate targets, uptake is slowing. Without urgent local action, the transition will remain uneven, expensive and inaccessible for many.

The challenge now lies with London's leaders. National policy helped establish the EV market, but it is up to City Hall and the boroughs to make EVs work across the city. That means supporting people, not just technology—and ensuring the transition reflects how Londoners actually live, travel and work.

Some steps are particularly pressing. Extending the CVD beyond 2025 is a clear way to keep early adopters engaged, provide certainty to those considering the switch, and thereby protect progress on emissions. Others—like expanding access to home charging and making EVs affordable through social leasing—are critical to ensuring that going electric becomes a realistic option for all, not just the few.

If London acts now, it won't just meet its climate commitments—it will set the pace for cities across the UK and beyond, showing that the future of driving is electric. **That future starts here.**

GLOSSARY

ULEZ: Ultra Low Emission Zone, an area in London that charges an emissions-based fee to non-compliant vehicles. The ULEZ was initially introduced in 2019 and expanded to cover all of Greater London in 2023. The charge is £12.50 per day, applying to motorists 24/7.

CCZ: Congestion Charge Zone. An area of central London subject to an access charge. The charge is £15 per day, subject to exemptions and discounts; and is active between the hours of 7am and 6pm on weekdays and 12pm to 6pm on weekends and Bank Holidays.

CVD: Cleaner Vehicle Discount, formerly known as the Ultra Low Emission Discount (ULED), waives congestion charge zone fees for Electric vehicles. Registering for the discount costs £10 per year, in return granting a 100% discount from congestion charges.

LTN: Low Traffic Neighbourhoods use a range of methods (bollards, barriers, road signs) to restrict the passage of motor vehicles, while letting pedestrians and cyclists through. These are designed to encourage travel by walking or cycling, both to reduce pollution and traffic.

LEVI: Low Emissions Vehicle Infrastructure funding, disbursed by the Department for Transport to support local authorities to roll out charging infrastructure.

DfT: Department for Transport

TfL: Transport for London

EV: Electric Vehicle

PHV: Private Hire Vehicle

ICE: Internal Combustion Engine

HGV: Heavy Goods Vehicle



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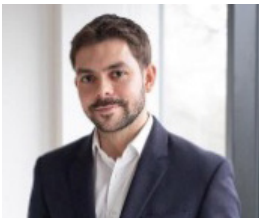
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