Safety, Sustainability and Human Resources Panel

Date: **16 May 2024**

Item: **Electric Vehicles Update**

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS

This paper will be considered in public.

1 Summary

1.1 This paper updates the Panel on our implemented and forthcoming key proposals to deliver electric vehicle (EV) charging infrastructure and convert fleets that we control to zero emission. It follows a previous update to the Panel in December 2021.

1.2 The paper provides the following:

(a) Introduction and Background;

(b) London's 2030 EV Infrastructure Strategy;

(c) Delivering Public EV Infrastructure;

(i) EV Infrastructure Delivery Programme;

(ii) EV Charging Hubs; and

(iii) Local EV Infrastructure Fund;

(d) Converting Fleets to Zero Emission;

(i) Zero Emission Bus Fleet;

(ii) Taxis and Private Hire Vehicles; and

(iii) TfL support fleet; and

(e) Emerging Issues.

2 Recommendation

2.1 **The Panel is asked to note the paper.**

3 Introduction and Background

3.1 London's EV charging network has grown by 300 per cent since 2019. As of 31 March 2024, London has 19,451 public EV charge points, representing a third of the 59,590 public charge points nationally. London's charging network comprises:

(a) 13,217 slow (lamp column, typically 3-5kW);

(b) 5,060 fast (7-22kW);

(c) 1,174 rapid (50kW) and ultra-rapid (100kW+) charge points; and

(d) 41 rapid/ ultra-rapid hub sites, each with six or more charge points (435 charge points in total across these hubs).

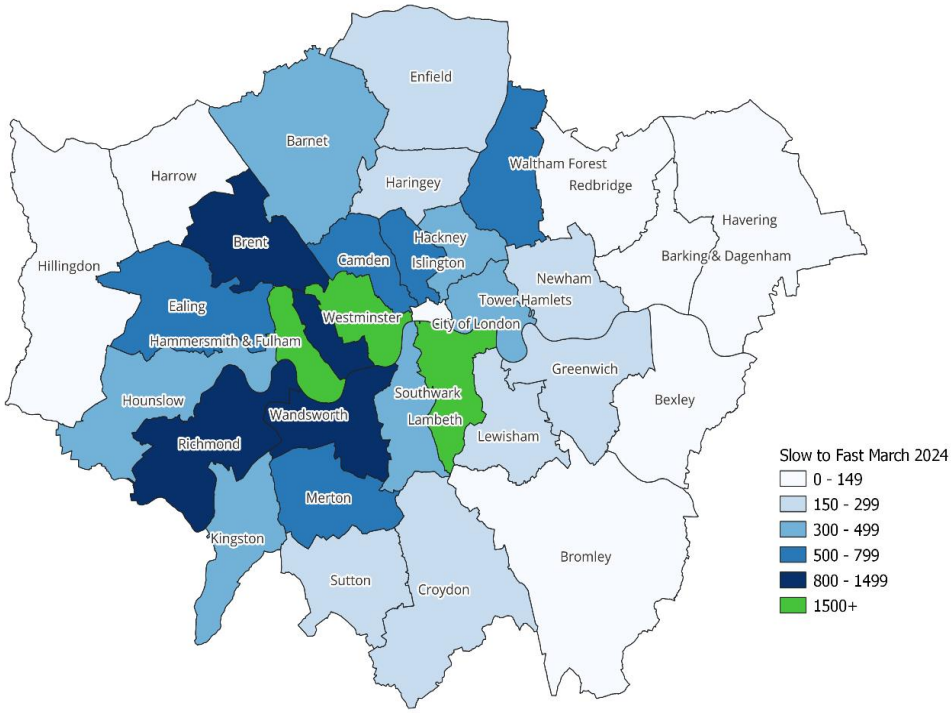

Figure 1: Distribution of slow-fast EV charge points (source: Zapmap, Mar 2024)

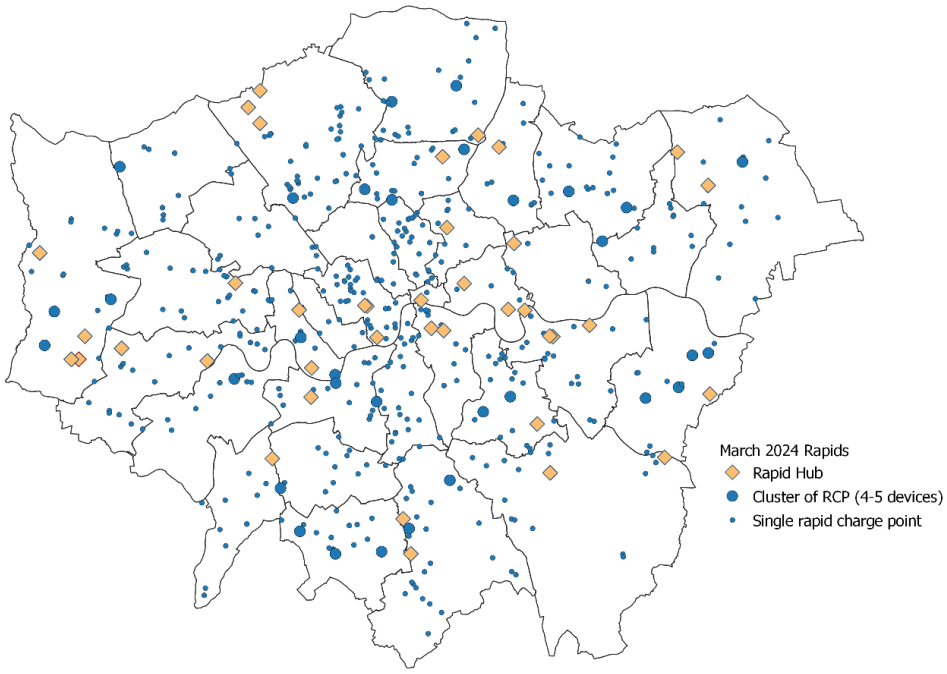

Figure 2: Distribution of rapid EV charge points (source: Zapmap, Mar 2024)

3.2 Inner London boroughs have the highest number of public slow to fast (3kW – 22kW) charge points, with a high number also seen in several outer London boroughs in the west of the capital. Figure 1 illustrates the current distribution by number range for each borough.

3.3 The number and distribution of rapid and ultra-rapid charge points, both individual and in hubs, are illustrated in Figure 2. Compared with 2019, rapid and ultra-rapid charge points have grown by over two-and-a-half times, from 323 to 1,174. TfL has delivered 300 rapid charge points and assisted in delivering three rapid charging hub sites at Stratford, Woolwich and in the City of London.

3.4 London plug-in vehicle registrations continue to increase, with 151,000 cars (5.8 per cent of all cars) registered (Quarter 3 of 2023/24), of which 93,450 (3.6 per cent of all cars) are battery EVs. In comparison, 4.1 per cent of cars registered in the UK are plug-in vehicles and 2.6 per cent are battery electric.

4 2030 EV Infrastructure Strategy

4.1 The last EV update presented to the Panel, on 2 December 2021, (as part of a wider update on air quality) referenced the EV Infrastructure Strategy for Greater London, published later that month. The Strategy's aim is to support a net zero carbon target for London by 2030; its vision to accelerate the transition to zero emission vehicles by setting out EV infrastructure requirements, focusing on essential vehicle trips by key user groups. These groups are identified as those making high mileage trips, performing an essential role – including taxis and private hire vehicle (PHV) drivers as well as other commercial vehicles. While the priority for other groups is mode shift to walking, cycling and public transport in line with the Mayor's Transport Strategy (MTS) objectives, we want to ensure that EV infrastructure in London supports everyone who needs to drive to switch to zero emission transport.

Commitments

4.2 The key commitment in the Strategy is to unlock Greater London Authority (GLA) land for rapid charging. This is being done through our London Electric Vehicle Infrastructure Delivery (EVID) programme and our EV Charging Hubs programme, run by Places for London, TfL's property company. Updates on both these programmes follow in later sections. Other commitments focus on specific user groups. We want to better understand and help remove barriers for high-mileage commercial fleet users, especially taxi and private hire and smaller operators relying on vans for servicing and delivery, by incentivising the accelerated deployment of charging infrastructure – in the right locations and sufficiently ahead of need. Other important commitments in the Strategy have already been delivered, including:

(a) establishing a commercial vehicle fleet database to understand travel behaviours and trip patterns to aid future planning and investment in infrastructure to support commercial fleets. This was informed by a programme of stakeholder engagement in 2023 including focus group discussions, a survey of operators, and interviews with fleets, Charge Point Operators (CPOs), Distribution Network Operators (DNOs), vehicle manufacturers and industry associations and trade bodies. In December 2023, we published a commercial vehicle dashboard to show where there is

a higher need for public charging points for vans in London. It includes a heatmap showing which areas will need more rapid, opportunity charging, as well as overnight, slow-to-fast charging;

(b) publishing an EV infrastructure borough support pack in January 2024 to assist borough officers with developing or updating local EV infrastructure strategies and borough delivery of public charge points. This pack includes information to help identify future demand for infrastructure from key user groups, as well as accessible and inclusive charging considerations; and

(c) in response to our commitment to work with energy distributors, we created a London EV Infrastructure Partnership in January 2024, bringing together TfL, boroughs, GLA, functional bodies and DNOs to increase awareness of EV infrastructure plans, identify efficiencies and share experiences of delivery.

4.3 There were two announcements at the national level last year that impacted the EV market. On 20 September 2023, the Prime Minister announced a delay in the phase out of the sale of new petrol and diesel cars in the UK, from 2030 to 2035. This was followed by confirmation from the Department for Transport (DfT) on 28 September that the Zero Emission Vehicle sales mandate and CO_2 emissions regulations for new cars and vans sold in the UK were to come into force on 1 January 2024. The legislation requires sales of 22 per cent of new cars (and 10 per cent of new vans) to be zero emission in 2024, rising to 80 per cent of new cars (and 70 per cent of new vans) to be zero emission in 2030.

4.4 We committed in the Strategy to update London level forecasts of plausible ranges of charge points needed, every two to three years. Accordingly, we are now reviewing our infrastructure model forecasts using up-to-date data on user behaviour and industry insights, to cater for different trajectories of EV uptake and charging patterns. These forecasts will also take advantage of new data and analytical tools that were not available for the previous forecasts in 2021. We will undertake stakeholder engagement to validate updated forecasts and refresh the commitments for our EV Infrastructure Strategy.

5 EV Infrastructure Delivery

EV Infrastructure Delivery Programme

5.1 The EVID programme was initiated in February 2021, firstly engaging with the market, and learning lessons from TfL's earlier rapid charge point delivery to design a commercially sustainable delivery model for both the public sector and charging network operators. A three-stage site assessment and due diligence framework was established, starting with over 2,500 locations on TfL land to be screened to determine their suitability for inclusion in TfL's tender offer. The contracts awarded in two separate procurements during 2023 (won by the CPO Zest) were for three batches, part of a first Tranche of the EVID programme. The target for Tranche 1 is to deliver 100 rapid charging bays. Preparatory and installation works commenced in February 2024, with the first batch of 39 charging bays targeted to be operational by September 2024. The remaining batches (two and three) are targeted to be delivered by June 2025.

5.2 A second Tranche of EVID aims to deliver a further 100 rapid charge points on TfL land, with the next batch of sites due to be released in spring this year. We are also working with GLA Group organisations (Metropolitan Police Service, London Fire Brigade, London Ambulance Service, London Legacy Development Corporation and GLA Property) to identify land they own that could be used for publicly accessible rapid charging. We have updated our commercial strategy to maximise the opportunity for a diverse range of suppliers to bid for this next tender.

EV Charging Hubs

5.3 In November 2023, Places for London launched a tender for a joint venture (JV) partnership to fund, design, build, operate and maintain EV charging hubs across the capital. The objective of this JV is to generate long-term, sustainable and growing dividends for the partnership by delivering material improvements in the number, distribution and sustainability of EV infrastructure.

5.4 Each site will deliver a minimum of six publicly accessible ultra-rapid charging bays of 150kW+, including at least one bay for those with accessibility needs, which will allow drivers to charge their vehicles in less than half an hour. The initial portfolio includes five seed sites, in Hillingdon, Ealing, Newham and Haringey. These benefit from Places for London's ownership of the site, a secured grid connection offer from the DNO, independent expert due diligence assessing the site's initial feasibility, and a concept design. Depending on the individual site opportunities there is also the potential to:

(a) deliver retail and amenity facilities;

(b) offer a range of additional non-ultra rapid charging speeds to cater for different user needs; and

(c) co-locate other transport or commercial development opportunities on or around the hub.

5.5 The first stage of the tender closed on 22 January 2024 and bids are now being assessed. We expect to announce our partner later this year with the delivery of our first site progressing soon after.

5.6 We have also completed due diligence on an additional 20 sites, providing a clear pipeline for growth for the JV. A further 40 sites could be made available to the JV partnership subject to suitability and the JV's performance. These additional sites will be primarily sourced from 100+ roadside locations of at least 500m^2 on the TfL Road Network and 75+ station car parks. We will also continue to work with the GLA Group, London boroughs, and major private landowners to bring additional sites into the JV.

Local EV Infrastructure Fund

5.7 London has been allocated £35.7m of capital funding and £3m of capability funding from the DfT's Local Electric Vehicle Infrastructure (LEVI) fund to accelerate the delivery of low-powered charge points on borough roads for residents without access to off-street parking and to build resource within boroughs to develop and deliver EV infrastructure. The national funding formula

takes account of levels of existing infrastructure, deprivation, rurality, and degree of off-street parking available.

5.8 TfL is working with London Councils and supporting boroughs to access London's capital funding allocation. TfL support included seconding a dedicated officer, sharing a detailed charge point specification and contract template, plus the provision of both strategic and detailed data with supporting analysis. In summer 2023, boroughs formed nine partnerships to collaboratively procure charge points, submitting expressions of interest to the Office for Zero Emission Vehicles. To date, three partnerships and Hackney Council have been awarded £10m of funding. We expect the remaining partnerships to finalise their applications for funding in 2024. The partnerships and constituent boroughs are shown in Figure 3.

5.9 TfL also manages London's capability funding and works closely with London Councils to give practical support to borough partnerships to enable them to obtain the greatest benefits from both LEVI funding and commercial operators. London Councils intends to set up a London-wide Dynamic Purchasing System to help boroughs by streamlining the procurement of charge point operators, to ensure greater consistency across London in terms of key performance indicators, customer service and pricing tariffs as well as simplifying tendering for charge point operators. The capability funding also provides funding to conduct research to support boroughs in delivering EV charging infrastructure to meet the needs of their residents and key user groups.

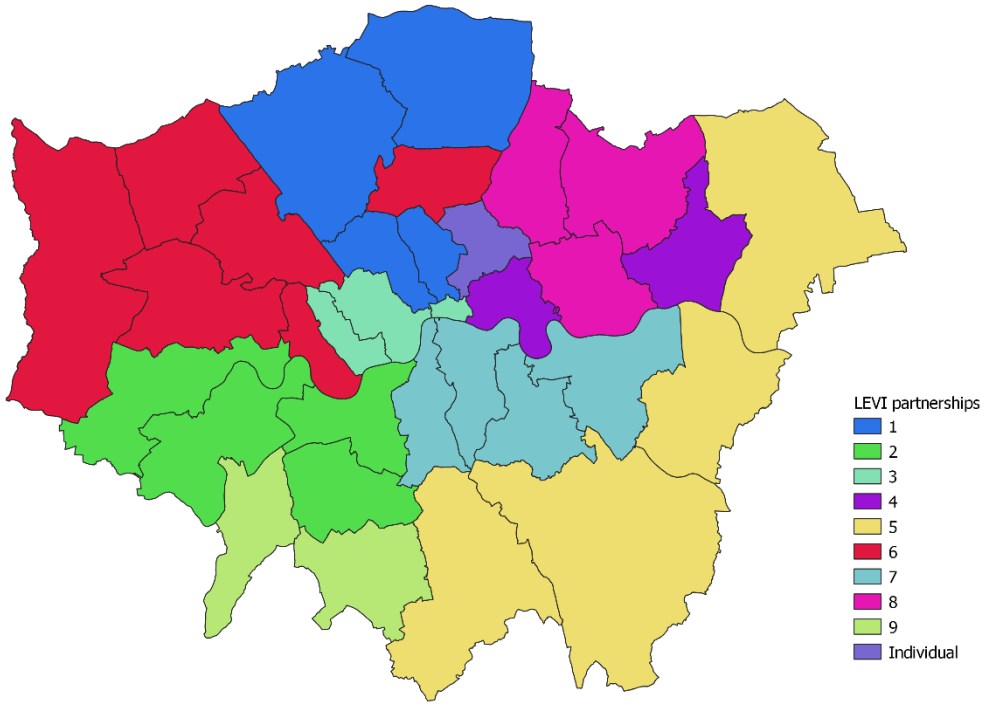

Figure 3: The LEVI London Borough Partnerships

6 Converting Fleets to Zero Emission

Zero Emission Buses

6.1 London has the largest zero-emission bus fleet in western Europe and our ambition is to convert the entire fleet to zero-emission by 2034 or accelerated to 2030 with additional government funding. We have reached another significant zero-emission milestone and now have over 1,400 zero-emission buses operating on numerous routes across London. This means 16 per cent of the bus fleet operates with zero-emission vehicles, which include hydrogen, battery electric and 'opportunity charged' electric buses.

6.2 Zero-emission buses contribute to the decarbonisation of the transport network, which is crucial to our work to meet the Mayor's mission for London to be a net zero carbon city by 2030. It is estimated that through the decarbonisation of London's bus network, we could save an estimated 4.8m tonnes of carbon by 2034 or an estimated 5.5m tonnes of carbon by 2030 (with Government funding).

6.3 Introducing new zero-emission buses in London involves collaboration from our bus operators and bus manufacturers. We continue to support investment into innovative zero-emission bus technology, jobs, and production across the bus industry.

Taxis and Private Hire Vehicles

6.4 Since 1 January 2018 all newly licensed taxis have been required to be Zero Emission Capable (ZEC). As of 16 April 2024, London has a total of 8,272 actively licensed ZEC taxis, representing 57 per cent of the current taxi fleet. Following changes to taxi age limits in 2019, from November 2022 the maximum age limit for Euro 3, 4 and 5 diesel taxis is 12 years. The maximum age limit for Euro 6 diesel taxis and ZEC taxis remains at 15 years, which is also the age limit for taxis that are newly converted to Liquid Petroleum Gas. The maximum age limit for PHVs remains at 10 years. From January 2023, all PHVs licensed for the first time have to be ZEC and meet the Euro 6 emissions standard.

TfL Support Fleet

6.5 For TfL's own fleet, we are undertaking a programme to initially convert the light duty vehicles (cars and vans) in our operational support fleet of approximately 1,000 vehicles to become a Zero Emission Fleet (ZEF). This is the first step in working to meet our targets as set out in Proposal 32 of the MTS:

(a) all cars in the GLA Group support fleet to be zero emission capable by 2025 at the latest;

(b) all newly purchased or leased cars and vans (less than 3.5 tonnes) including response vehicles, to be ZEC from 2025;

(c) all heavy vehicles in the GLA Group fleets to be fossil fuel free from 2030

(d) the entire GLA fleets being zero emission by 2050.

6.6 Initial funding, and resources, for this first phase of ZEF is confirmed, though the scope, delivery strategy and costs are being reviewed. We are currently undertaking a market engagement exercise to establish an optimal delivery model that will achieve value for money. Other activities underway include finalising Scope Definition, starting site surveys and feasibility assessments, reviewing power capacity, and confirming the programme Estimated Final Cost and spend

schedule. By end of 2024 we plan to have completed surveys and works to get charge points previously installed at various depots, including Acton, fully operational and have 10 new charge points live at Plumstead depot. This work will provide opportunities to increase the number of ZEC vehicles in the fleet by the end of 2024.

6.7 Further work, towards 2030, will involve upgrading power supplies and the installation of EV charging infrastructure across TfL sites, including depots, London Underground stations, bus stations and office buildings where possible. Various studies and data analysis, including the use of vehicle telematics, either has been undertaken or is being independently validated, to determine the optimum number, type (power rating) and locations of charge points. We are currently identifying priority sites and options to phase delivery over a number of years.

6.8 Meeting the MTS target for heavy vehicles to be fossil fuel free from 2030 will require further funding to be secured and a project formed to develop and later deliver the solution. The technology pathways for heavy vehicles are less certain than for cars and vans, but given the commitment, could include battery electric, hydrogen or sustainable biofuels.

7 Emerging Issues

7.1 The continued higher cost of EVs:

(a) achieving price parity with petrol and diesel vehicles will be critical for EV adoption as Government incentives are gradually withdrawn. Most projections suggest that many EVs will reach price parity within the next few years, although progress so far has not been as rapid as previously estimated;

(b) the increased cost of electricity has been an issue. EV charging can be significantly cheaper than petrol/ diesel on a per mile basis, although energy price volatility and high electricity prices have eroded that benefit in the last two years. If energy costs trend back towards their long-term range, the benefit of lower overall costs should return; and

(c) VAT is levied on electricity consumed at public charge points at 20 per cent, whereas EV users who can charge at home pay the domestic rate of VAT on energy bills of five per cent. We advocate for VAT on charging at public charge points to be reduced in line with the lower domestic rate, since this exacerbates running costs and can be at odds with the principles of fairness and inclusivity for those EV users without off-street parking.

7.2 Charge points need to be accessible to all:

(a) accessibility is a theme in EVIS, with the principle that EV infrastructure should be physically accessible for all, available and easy to use. Coverage should extend to all of Greater London with an equitable spatial distribution based on geodemographic considerations. We welcomed the publication by the British Standards Institution (BSI) of the Publicly Available Specification (PAS) 1899 accessible EV charging specification, making accessibility a consideration in charge point delivery and making it easier for disabled

drivers to switch to EVs. While TfL does require that suppliers responding to its procurement specifications comply with PAS 1899, the application of this voluntary standard is subject to commercial considerations by CPOs, resulting in potentially small numbers of fully accessible charge points delivered in practice; and

(b) issues with EV design standards, highlighting concerns for disabled users and women, have been raised recently at the TfL Board and All Party Parliamentary Group on Electric Vehicles. TfL is planning to hold a workshop in the summer to discuss how to better incorporate the requirements of PAS 1899 and inclusive design and safety principles into TfL and London borough charging infrastructure procurement.

7.3 A future focus needs to be on the requirements of commercial vehicles: Building on the commercial vehicle database which helps to illustrate charge point locations, specific requirements of commercial vehicles at the charge point remains less understood. Light goods vehicles – delivery vans, especially extra-long wheelbase versions, are significantly longer than a 'standard' parking bay's dimensions. This is already causing issues with vans either not able to access some charge points or by blocking access to adjacent charging or parking bays. The development of a 'van standard' by stakeholders has been discussed as a way to avoid this in future, but further work to accelerate and complete this work is required. An outstanding issue is ownership and status of this and whether should it be purely industry-led and enacted by way of a standard, such as through the BSI.

7.4 Shared infrastructure remains at arm's reach: Supporting the delivery of shared charging facilities was one of the commitments in the 2030 EV Infrastructure Strategy, carried over from support it was given by the Mayor's EV Infrastructure Taskforce in the earlier 2019 Delivery Plan. However, although stakeholders have shown some interest it has been difficult to deliver for a number of reasons. We will seek to work with them to overcome these to deliver on this commitment.

8 Next Steps

8.1 As well as noting this paper, the Panel is asked to consider the emerging issues we have identified. We would be happy to update the Panel on our work to validate updated public charge point forecasts and the refresh of our commitments in the EV Infrastructure Strategy later this year.

List of appendices to this report:

None

List of Background Papers:

None

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