Committee(s): Port Health and Environmental Services Planning and Transportation	**Date(s):** 3 March 2020 6 March 2020
Subject: Electric Vehicle Charging Infrastructure - Action Plan	**Public**
Report of: Department of the Built Environment	**For information**
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Summary

The City of London Transport Strategy includes a commitment to produce an Electric Vehicle Charging Action Plan, that identifies how many charge points, including charging hubs, are required up to 2022.

This report provides a forecast of the requirements for charging facilities in the City, up to 2025. We have commissioned an independent assessment of need from Energy Savings Trust (EST). The City of London has undertaken a first identification of potential locations and now will investigate the opportunity for these further, through necessary technical assessments and marketing/tendering for concessionaires to provide the equipment and electricity service.

Members are asked to:

- Note the report.

Main Report

Background

1. Proposal 30 of Transport Strategy includes a commitment to produce an Electric Vehicle Charging Action Plan that identifies how many charge points, including charging hubs, are required up to 2022. The Action Plan period has been extended to 2025 to align with the Mayor of London's EV Infrastructure Taskforce, which is working towards targets for wider zero emission zones across London.

2. Additional electric vehicle (EV) charging facilities will be required to support the transition to electric vehicles and to support the introduction of local zero emission zones.

3. Members of the Port Health and Environmental Services and Planning and Transportation Committees have also raised concerns that we should be making more progress to deliver adequate EV charging facilities. Additionally, the GLA/Mayor of London commissioned a broad ranging assessment for

London to identify barriers to delivery and assess the infrastructure requirements for London as a whole.

4. This piece of work is looking at provision to 2025. This is the timeframe proposed by the GLA/TfL for introducing a central London zero emission zone. The City has also committed to supporting this and introducing local zero emission zones in two locations by 2022.

5. We have commissioned the Energy Savings Trust (EST)to look in more detail at the requirements for the Square Mile, looking at numbers of charge points for each user category and type of charge point. The EST have been working with TfL on demand forecasting and have good knowledge across the different sectors involved in the EV market.

Current Position - Progress on existing plans.

6. Progress has been made on new charging infrastructure in the last 18 months, with new charge points in place and others into the process of being delivered.

    - Noble Street taxi rapid charge point has been in operation since May 2019. By October average use of this facility was 12 hours a day or 50% occupancy. This is taxi dedicated site funded by TfL subsidy.
    - At Billingsgate Market a rapid charge point is being installed, for commercial operators on its site. This is being provided without any subsidy and will be open access to any user. This should be in place within the current financial year.
    - Smithfield Market has already identified a demand to increase the number of standard chargers in its car park, primarily for traders but also open to general public / residents.
    - At Walbrook Wharf installation is in progress to provide for the Corporation's refuse collection contractor.
    - Corporate fleet use is being provided for by installation this year at Guildhall, the Barbican Centre, Baynard Parks Service depot and the Cemetery and Crematorium.
    - Baynard House car park has a proposal for up to 10 rapid charge points. A concessionaire has successfully bid for 6 charge points. A new electricity substation will enable further charge points at this location in the future if demand requires it. Work is progressing on the scheme in partnership with TfL. This facility is expected to open in the summer as soon as fire safety works on the car park have completed.

7. A mix of 50 standard and slow public access charge points are already available in the City's public car parks, and 22 charge points were installed exclusively for residents in the Barbican in 2018 Not all of those in the current provision are at the 7kW standard, we will therefore be tendering to replace with 7kW for this category. The contract on those supplied in the 5 public car parks has come to an end and therefore a new tender during 2020 is due.

Future Requirements – Demand analysis.

The Mayor's Electric Vehicle Infrastructure Taskforce

8. A comprehensive piece of work has been commissioned by the Mayor's office, which is designed to guide the public and private sectors and enable delivery where appropriate. An exercise in predicting requirements to 2025 has been carried out considering rates of conversion to EV and the targets the Mayor has set to support the transition to EVs. Availability of grants and practical support is included in a comprehensive approach. A link to the full document is London electric vehicle infrastructure delivery plan (www.tfl.gov.uk/modes/driving/electric-vehicles-and-rapid-charging#delivery-plan).

9. The key findings from the work are:

    - EV driver behaviour is evolving and there is a need to be cautious to avoid out of date technology and infrastructure in the wrong places. The modelling is key to steering delivery, using uptake forecasts and targets.
    - Requirement to have between 2,500 – 4,100 rapid charge points; 33,700 – 47,500 standard charge points across the whole of London by 2025. By the end of 2020, work is in progress for 300 rapids to be in place and 3,500 standards.
    - Evidence from the National Grid and UK Power Networks, that whilst there are capacity issues to manage in some locations, that further use of a smart approach to time and 'load' management means that further EVs can be supported in London.
    - Strategic and demand led approach to further 'standard' chargers, rather than 'desire' led is critical, as this risks government subsidy not being spent in the optimum locations and redundant technology being in place.

City of London demand forecast for EV Chargepoints.

10. Work directly with boroughs and the City is looking at identifying locations to fulfil these ambitions. The nature of activity for freight and taxis in the Square Mile together with relatively low numbers of residents and no on-street residential parking means there is a different pattern of demand for charge points in the Square Mile. We have therefore, commissioned a piece of work by the Energy Savings Trust that looks at likely requirements based on vehicle types on City streets. This give us figures for each user type:
    - Taxi
    - Motorbike
    - Private car
    - Light goods/freight

11. The methodology has looked at using historic / future anticipated take up rates of EVs for each user type and anticipated charging patterns based on industry/market expectations giving a forecast to 2025. A range has been given in the forecast, with demand in that range dependent on the market take

up and government approach. Future factors could have significant impacts, including:

- Implementation dates for zero emission zones in the City and Central London
- Charger technology advancing
- Supply chain confidence
- Battery technology
- New vehicle costs
- Used market costs
- Neighbouring boroughs infrastructure provision
- Grid capacity & impact of smart charging incentives

12. The key recommendations are set out below and the Action Plan (Appendix 1) sets out how the City is taking each of the recommendations forward. The final report is provided in Appendix 2

- Develop a monitoring and evaluation framework. Observe and chart actual Plug in Vehicle (PiV) uptake within CoL traffic flows and utilisation of existing charging infrastructure.
- Prepare immediate plans for phased installation of 26 rapid (50kW) chargers and 65 standard (7kW x 2 point) chargers meeting the forecasts under the low scenario.
- Dynamically evaluate the suitability of the low scenario against technological developments and infrastructure plans across Greater London.
- Prepare contingency plans that will mitigate against the impacts of unmet demand equivalent to the high scenario, and alternative proposals for oversupplied sites.
- Work with neighbouring boroughs to identify collaborative opportunities for strategically placed, scalable and efficient infrastructure solutions on arterial routes.
- Work with Electric Vehicle Supply Equipment (EVSE) industry and other stakeholders, to ensure that commercial opportunities for market led, or partnership solutions are well publicised and free from unnecessary development barriers.

Table 1: Current charge points and forecast 2025 requirements.

	Rapid 50kW	Standard 7 kW
Current / due for completion by end 2020	8	32 (2 point)
Forecast requirement for 2025	26	65 (2 point)

13. The total forecast number recommended for 2025 includes current provision. Standard chargers in this recommendation are 2-point 7kW chargers, i.e. 65 chargers with dual access that can charge two vehicles at the same time. In our car parks there are currently a mix of slow (3.7kW) and standard (7kW)

charge points, which are available to the public. Of the 26 rapid charge points, 13 is the recommended number to meet taxi drivers' needs.

Enabling and providing EV charge points.

14. We propose to investigate feasibility of specific sites to install further charge points, but part of the role of the Corporation will be to enable rather than be the specific provider as there is a limit to grants and public funding available. The recommendations from EST do not specify who the provider should be but focus on the amount needed to serve the anticipate EV market.

Funding options.

15. There can be substantial set up costs in providing EV infrastructure depending on the kW of the charge points and the specific location. Some government grants are currently available but have certain qualifying criteria and none meet 100% of the costs. Cost of enabling works can vary significantly depending on the location to connect to electricity supply. If network upgrades and new electricity substations are required costs are likely to be over £100,000. A straightforward connection is between £10,000 - £30,000.
16. Funding options include:
    - Fully commercial - where operator meets cost of all enabling works - providers are only likely to do this where they consider the revenue return sufficient and will require concession/lease for sufficient period. If in a private residential car park grants are available to residents for part of the infrastructure, but this does not meet the setup costs/enabling works.
    - Government/TfL funding for enabling works, for rapid 50kW chargers and for on-street residential, through grant application. TfL have funded the installation of charge points on Noble Street and in Baynard House car park (CoL has no on-street residential parking and no anticipation of this changing).
    - Fully private - if residents or businesses choose to meet all costs.
    - Fully funded by the Corporation - where for own fleet operational use. A small 'work place' grant is available but this only meets a small proportion of the cost.

Corporate & Strategic Implications

17. Air quality is identified as Corporate Risk 21, this area of work and the Action Plan will support the transition to electric vehicles and therefore contribute positively towards cleaner air.
18. The project also contributes towards corporate objectives, supporting outcome 11 We have clean air, land and water and a thriving and sustainable natural environment.
19. Delivery of charging infrastructure also helps deliver the City Corporation’s Transport Strategy and Air Quality Strategy

Financial Implications

20. For further installations led by the Corporation we will seek TfL/Government funding and fully commercial delivery opportunities will also be identified. We will also consider use of TfL Local Implementation Plan (LIP) funding and submit capital bids for internal funding if grants or other funding is not available. The Action Plan is for a phased implementation over the next five years therefore financial details will be set out with specific projects.

Conclusion

21. The report by EST has given an evidence based guide on requirements for EV infrastructure for the five years up to 2025. We plan to continue with installations of charge points that meet part of the forecast and implement these in 2020. We will commence specific site feasibility assessment for further sites to plan for the forecast requirements. We will continue communication and coordination with industry, TfL and neighbour boroughs to maintain awareness of developments in technology and public demand.
22. An update report will be produced on actions and data after 18 months, in June 2021.
23. In identifying new locations for charge points we will adhere to the policy adopted in October 2017 which states that charge points will be placed off-street and only on-street by exception.

Appendices

Appendix 1: Electric Vehicle Action Plan for the City of London - DRAFT

Background Papers

1. The Mayor of London's Electric Vehicle Infrastructure Taskforce Action Plan (June 2019). London electric vehicle infrastructure delivery plan (www.tfl.gov.uk/modes/driving/electric-vehicles-and-rapid-charging#delivery-plan).
2. Energy Saving Trust - Electric Vehicle Infrastructure Forecasts 2025 for the City of London Corporation (www.cityoflondon.gov.uk/services/transport-and-streets/Documents/electric-vehicle-infrastructure-forecast-2025.pdf).

Hard copies of both reports are available on request.

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