

<b>Committee(s)</b>	<b>Dated:</b>
Residential Consultation Committee – for information Barbican Residential Committee – for decision	28/01/2019 31/01/2019
<b>Subject:</b> Electric Vehicle Charging Infrastructure	<b>Public</b>
<b>Report of:</b> Director of Community and Children's Services	<b>For Decision</b>
<b>Report author:</b> Beth Humphrey – Low Emission Neighbourhood Project Manager	

### Summary

In December 2016, a Working Party was established by the Barbican Residential Committee to look to pilot the introduction of Electric Vehicle (EV) charging points across the Barbican Estate.

In May 2018, 22 charging units were installed in five car parks on the Barbican Estate providing a total capacity for 30 EV charging bays. A selection of charging units (3kW, 7kW, 22kW, dual, single, tethered and cable) were chosen and installed as part of the trial to determine the best type of charger to meet Barbican Estate residents' requirements.

15 participants took part in the 6- month pilot trial which concluded in November 2018. Consultants were contracted to oversee the pilot and produce a report of the study with recommendations for a working business model regarding cost and management of the charging units, and for further roll-out of EV charging on the Barbican Estate (Appendix 1).

The installation of the current electric vehicle charging units on the Barbican Estate, the pilot study and associated costs has been funded by the Low Emission Neighbourhood (LEN). However, this funding ceases in April 2019. Therefore, a decision is required on the immediate and long-term proposals for management and extension of EV charging on the Barbican Estate.

### Recommendation(s)

The Residents Consultation Committee are asked to comment on and note the Electric Vehicle Charging Infrastructure report.

The Barbican Residential Committee are asked to approve that:

- From 1<sup>st</sup> April EV charging point costs be covered by EV charging bay users. Management of EV charging points and bay allocation to new users will follow same method as during the pilot trial as outlined in the management plan in paragraph 19 of this report.

- Officers continue to progress this project through the Working Party to install further EV charging in Barbican Estate car parks in line with forecasts and recommendations in the pilot study report and will report back to these committees in one-years' time as outlined in paragraph 20 of this report.

## **Main Report**

### **Background**

1. In July 2016 the Mayor of London awarded the City of London Corporation £990,000 over three years to implement a Low Emission Neighbourhood (LEN) in the Barbican and Golden Lane area. The funding was designated to support a range of focused pilot measures to improve air quality locally. The funding for LEN projects ceases in end of the 2018/2019 financial year.
2. A survey of Barbican Residents in 2014 revealed that 150 residents would consider buying an EV with 22 actively wanting to. In the last 5 years, Barbican Estate Officers have received a number of requests for charging points, indicating a high level of demand.
3. Recognising the demand for EV charging units, a Working Party was set in up December 2016 by the Barbican Residential Committee, to investigate EV Charging options for the Barbican Estate.
4. To set a baseline for the pilot study of the charging infrastructure use, an additional survey ran from January – May 2018. Of the 81 respondents, 12 (24%) already owned a plug-in EV, with a further 51 (63%) of respondents considering purchasing an EV.
5. The Working Party and LEN Project team identified five car parks as the most suitable to pilot the introduction of charging points: Breton House, Bunyan Court, Cromwell Tower (02 Level), Thomas More and Willoughby House (01 Level).
6. In early 2018, funded through the LEN, work was undertaken to upgrade the power distribution in to these car parks to provide enough electrical supply for the charging points.
7. In May 2018, a total of 22 EV charging units were installed in the five carparks. Due to the 'dual charging' nature of some of the units, this provided 30 car parking bays with EV charging. For locations and types of chargers please see Appendix 1, pages 16-19.
8. A launch event was held in May 2018, with the attendance of over 80 residents, Members and EV industry professionals. At this launch event, the pilot trial began.
9. The pilot ran for 6 months with 15 participants, monitoring electricity usage from the EV charging points and assessing user and stakeholder experiences.
10. For the duration of the trial participants were granted a designated EV charging bay, in addition to their permitted car parking bay. In the majority of cases

participants ordinary use bay and EV charging bays were in the same car park as dictated by participant preference and convenience.

## **Current Position**

11. Consultants WSP were contracted to oversee the pilot project and produce a report detailing their findings on EV charger use and user experience. They have produced a report of the study with recommendations for a working business model regarding user and management costs associated with the charging units, and for further roll-out of EV charging on the Barbican Estate (Appendix 1).

12. Key findings from the pilot study:

- Positive response to the pilot from participants
- Average electricity consumption of 1.3kW / day per participant
- Low charger usage is due to high proportion of plug-in hybrid EVs in the participant group and the low mileage typical of the inner-City location
- Concerns over bay dimensions
- Preference for users to be charged per kW of electricity they use
- Preference for dedicated use bays
- Convenience of charging units' locations is key to uptake of using charging points
- Preference for communicating charging units (RFID) that can be operated with a swipe card and are connected to the Chargemaster management system
- 7kW units identified as most suitable for the demand and use by Barbican Estate residents

13. Estimated uptake of EVs by residents on the Barbican Estate suggest by 2025 there will be 86 EVs (10% of total vehicles) and by 2030 there will be 230 EVs (30% of total vehicles). This forecast is based on an average drawn from industry, manufacture and government forecasts, and acknowledges the potentially higher uptake in the City due to local factors, for example the Mayor's Ultra Low Emission Zone coming into force in April 2019. A full forecast is found in Appendix 1, Chapter 6.

## **Options**

14. Based on the demand for convenience, the Barbican Estate should take steps to install EV charging units into the remaining car parks that do not currently have this infrastructure (Appendix 1, Chapter 8).

15. To increase EV charging capacity to meet future demand, the Barbican Estate should install new EV charging infrastructure in a 'scalable' manner. For example, passive cabling infrastructure can be installed in identified banks of bays in all car parks within the next two years, providing the ability to install individual charging

units to selected car parking bays on an 'on demand basis' as the electrical supply infrastructure will already be in place (Appendix 1, Chapter 8).

16. The LEN is currently funding electricity costs associated with the charging points use, in addition to costs associated with the pilot study. All future costs associated with EV charging on the Barbican Estate should be covered through other means.

### **Proposals for the short term**

17. It is proposed that, regarding the EV related costs, from 1<sup>st</sup> April all electricity and management overhead costs are picked up by the EV charging bay owner.

18. There are two options through which costs would be met by the EV charging bay user.

- a. Option 1: EV charging users are billed per kWh of electricity at a proposed rate of 20-25p/kWh (14p/kWh domestic rate + 5-10p management levy/kWh).
  - i. Advantage of users only paying for the electricity that they are using.
  - ii. Does require more management to obtain individual usage records and provide individual bills accordingly.
- b. Option 2: EV charging bay users have an additional quarterly surcharge on their car parking bay permits.
  - i. Very little management needed as would be included in standard car parking bay permit and payment procedures.
  - ii. Disadvantageous to users who only use a small proportion of electricity to charge vehicles compared to more regular users.

19. It is proposed that the following management plan be progressed:

- Option 2 above in relation to EV charging costs
- EV charging capable bays remain assigned to a dedicated user as opposed to becoming communal use charging bays
- pilot participants have the option of retaining their allocated EV charging bay and/or their dedicated non-charging bays and pay the appropriate licence fees for their occupied bays
- new EV owners wanting a charging capable bay would request one when applying for a car parking permit route (the application form has an option for 'Electrical User') and be assigned a dedicated bay according to the method used for the pilot participants (consideration of resident's location preference, convenience and charging bay availability)

### **Proposals for the longer term**

20. It is proposed that the following is progressed in the longer term:

- in order to meet the longer term EV charging demand, Officers continue to progress this project to install further EV charging in the car parks in line with forecasts and recommendations in the pilot study report
- future EV charging bays are equivalent to two ordinary bays in recognition of the tight dimensions of the car parking bays and the need for extra space required to reverse park and plug-in chargers<sup>1</sup>
- Officers to consider alternative funding sources post-March 2019
- Officers to report back to these committees in one-years' time

21. It must be noted that progress will be dependent on resourcing in the Barbican Estate Office as a result of the LEN project ending this financial year and subsequent withdrawal of the LEN project officers.

### **Corporate & Strategic Implications**

22. This work supports the aims and objectives of the City of London Air Quality Strategy 2015 – 2020 and goes towards addressing air quality, which has been identified as a corporate risk.

23. This work supports Proposals 29 and 30 in the draft Transport Strategy that the City of London Corporation has recently consulted on.

24. Measures included in the LEN scheme support the Department of Community and Children's Services strategic aim of delivering value for money and outstanding services through the Barbican Estate's Service Based Review Programme.

### **Conclusion**

25. This project is currently being fully funded by the LEN project. From April 1<sup>st</sup>, 2019 costs and management associated with the EV charging in Barbican car parks will no longer be sustained by LEN funding and will be sourced elsewhere. The Working Party and BEO Officers will continue to progress EV charging on the Barbican Estate and report back to these Committees in one year's time.

### **Appendices**

26. Appendix 1 – Barbican Estate Residents Electric Vehicle Charging Infrastructure Study

### **Background Papers**

**ELECTRIC VEHICLE CHARGING POINTS PILOT PROJECT**, Report of the Director of Community and Children's Services - Residential Consultation Committee, 22<sup>nd</sup> May 2017 and Barbican Residential Committee, 5<sup>th</sup> June 2017

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<sup>1</sup> For the present EV charging infrastructure, current and new users will remain with an EV charging bay of current dimensions. All the installed charging units are in adjacent bays within a charging block bank of bays (Appendix 1, Chapter 4). For future EV bays, charging units should be installed every other bay to allow for the an EV car parking bay that is equal to two bay's width.