ELECTRIC VEHICLE CHARGING POINTS

A Summary Guide for Developers

October 2016
What are Electric Vehicles and Their Benefits?

- Electric vehicles (EV) are road vehicles containing batteries which are chargeable from mains electricity supply. These comprise either hybrid vehicles or fully electric vehicles, typically including cars, vans and bikes.

- Fully electric vehicles have a range of approximately 60-200 miles, fully charged. EVs with greater range retail at a higher price. Popular brands such as the Nissan Leaf have a range of 125 miles.

- Hybrid vehicle batteries generally have a range of 30-50 miles in addition to the traditional petrol engine.

- The maximum range of EVs continues to increase with technological improvements

- EVs are more cost efficient for owners over the lifetime of a vehicle

- EVs reduce carbon emissions by approximately 30% compared to traditional fossil fuel cars. EV owners are eligible to receive grants, tax deductions and private sponsoring.

EVs in Policy

- Local Authorities commonly define EV parking standards within local policy to define the minimum required provision at new developments.

- The Mayor’s London Plan for developments within Greater London (as updated March 2016) states that 2 in 5 car parking spaces (40%) should be provided as an EVCP (20% active and 20% passive).

- Parking standards for EVs vary outside of London, but are typically less rigid than the London Plan. A minimum provision of 5% of car parking spaces is commonly defined by Local Authorities.
**Electric Vehicle Charging Point (EVCP) Infrastructure**

- Active and / or passive EVCPs may be required as a provision for new developments.
- Active charging points are fully wired and ready to use.
- At passive charging points, the infrastructure is installed but electricity supply not activated and necessary charging equipment may not be supplied.
- Sites providing passive EVCPs need a sufficient electricity supply to cope with future demand.
- EVCPs can be provided publicly on-street or privately off-street, for home use for example. Duration to fully charge vehicles from EVCPs varies;
  - **Standard charge: 6-8hrs**  
    (Cheapest & usually used as a domestic private charger)
  - **Fast charge: 2-3hrs**  
    (‘mid-range’ retail price & frequently used as public charging points)
  - **Rapid charge: 30mins-2hrs**  
    (premium chargers & sometimes supplied as public chargers or for private developers e.g. at offices or supermarkets)
- An accessible electricity supply must be located in close proximity to an EVCP.
- Specifications for connector types typically comprise a Type 2 IEC62196-2 connector for active EVCPs to connect to the EV.
- The Charger connects to the mains supply with a 3-pin plug.
- Site audits should be undertaken to determine the feasibility of providing an EVCP at new developments.
Infrastructure Costs

- The capital cost of providing an EVCP varies widely depending on available grants / sponsorship, the type of development, whether infrastructure is located on or off street and the type or brand of charging point provided.

Guideline costs:
- public on-street EVCPs cost in the region of £6k - £10k for installation and equipment.
- private off-street EVCPs, costs are generally between £0 – £2.5k for installation and equipment.
- Cost of electricity averages £1.80 per charge (60 miles) for a standard domestic rate. This averages £225 a year (for 7,500 miles)
- Maintenance is often covered by the EVCP supplier.
- Electricity payment arrangements vary and are typically covered by either the developer, EVCP supplier, the development’s occupants or public funding.

Availability of EVCPs

- It is estimated that approximately 80,000 EVs have been sold in the UK, including both hybrid and fully electric vehicles.
- There are approximately 11,500 public EVCP connecters currently provided in the UK across 4,000 locations.
- The majority of public EVCPs comprise ‘fast’ chargers (2-3hrs to fully charge an EV).
- Zap Map is an online tool developed to illustrate the locations of public EVCPs throughout the UK and the charger type: https://www.zap-map.com/
- The availability of public EVCPs is subject to on-street parking restrictions, similar to blue badge permit holder bays, car club bays etc.
- Misuse of public EVCP bays may result in penalty fares being issued.
- Most EVCPs work on contactless payment or a token system.
**EV Clubs**

- EV clubs involve subscribing to a membership enabling discounted or exclusive use of EVCPs covered by the scheme.
- Traditional car clubs offering temporary use of vehicles through a booking system now provide EVs within their fleets.
- Source London is the first major EV club in the UK providing a network of EVCPs within London. Members subscribe to Source London for a fee of £5 per year, enabling use of any EVCP on the network.
- Some of these EVCP provide free charging, whereas others are available for an hourly tariff (£5 - £7.50 to fully charge).
- Charge Your Car is the largest ‘pay as you go’ EV club network in the UK, providing access to charging stations inside and outside of London, with many located in Scotland. It works under the same principle as Source London and the membership fee costs £20 per year.
- Usual on-street parking restrictions and charges still apply. Reservations for specific EVCP can be made via the Source London / Charge Your Car website or mobile app.

**Costs and Saving to EV Owners**

**Costs:**

- EVs typically more expensive to buy at the outset than traditional petrol and diesel cars (between 15% - 30%).
- Home EVCPs cost between £0 and £2,500.
- Electricity costs to charge EVs at home are approximately £225 a year (7,500 miles – 3p per mile).
- EV club membership costs between £5 and £20 per year.
- Public EVCPs cost between £5 and £7.50 (8-12p per mile) to fully charge an EV (60 miles) on tariff.

**Savings:**

- EVs are exempt from road tax.
- EVs are exempt from the London congestion charge.
- Grants are offered for up to £4,500 for the cost of cars and £8,000 for vans.
- Grants are offered for up to 75% of the home EVCP installation cost.
- Fuel savings per year from home charging are on average £750 compared to diesel and £1,275 compared to petrol (7,500 miles).
- Resale value is greater than traditional petrol vehicles.
- Reduced maintenance costs.

More information on available government grants can be found at [www.gov.uk/plug-in-car-van-grants/](http://www.gov.uk/plug-in-car-van-grants/)