



Electric vehicle charge point guidance

Lorraine Haskell

July 2021

Acknowledgements

I would like to express my gratitude to Martin Narraway (PUNL) and Syed Ahmed for their contributions and advice that have helped me create this guidance.

Thanks also goes to Jamie Baxter, and I had great pleasure working with my fellow Project Officers.

Should groups have any comments on this guidance they should email directors@communityenergy.london

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1. Introduction

This guidance is for community energy groups looking to deliver an Electric Vehicle (EV) charge point project. It should be read in conjunction with the Step by Step Project Guide found on the [CEL website](#), which sets out the different stages to delivering a project from start to finish.

The guidance is full of information and advice groups can use to help them progress their projects. This guidance is not exhaustive but should give groups a good basis for their projects.

A list of contractors that groups have worked with before can also be found on the CEL website, to help groups when procuring various services.

2. Site suitability

When finding a suitable site for a charge point, consider where EV drivers may need and use one, i.e. residential estates, leisure centres/gyms, schools and universities, care homes, warehouses, offices, hotels, supermarkets and retailers, places of worship, GP practices and so on.

Discussions with site owners are essential and together groups and site owners should consider:

- If there is a suitable space onsite to install a charge point, relatively near to the power supply for the site.
- If the site has good lighting, level ground, and sufficient drainage.
- If the location is safe for a user to access the charge point at all times of day or night, without introducing risks to road safety or personal safety.
- If cable runs from EVs will cause trip hazards.
- If there will be enough space around the charger for pedestrians and wheelchairs, and if the charge point would be accessible to the fire services.
- If the charge point should be private or made public.
- If charge points should be accessible 24 hours a day.
- If it matters how long parking spaces are used for.
- If there is a need/ possibility for multiple charge points.

Additional support

- Check out Forum for the Future's tool '[Power Paired](#)' to identify potential interested sites, or contact your [local council](#) for an idea of what sites might be attainable or if they have plans for certain sites already.
- Once you have found a site you will need to secure it. [Pure Leapfrog](#) explains the various legal documents that might be required.

3. Technology suitability

To select the right type of charge point groups should assess the demand and travel patterns of potential users.

Charge point types:

- Slow (3.6 or 7kW) - install costs around £1,000, Appropriate for long-stay/ overnight charging (normally used at residential properties), requires a single phase supply.
- Fast (7kW or 22kW) - Install costs are up to £6,000, requires a three phase supply.
- Rapid (43 or 50kW) - install costs are up to £50,000, needs a dedicated electricity supply, better for short-stay.

When choosing a charge point, groups should also consider:

- Types of sockets - A device should always have a Type 2 socket, and for fast charging devices CCS Combo and CHAdeMO sockets. It is important to install a charging point compatible with the widest range of EVs possible.
- Whether the chargepoint should come with a cable attached (tethered) or no cable (untethered).
- Type of mount: wall mounted or a post..
- If the charge point needs to work effectively with solar PV and/ or a battery.
- If the charge point should be 'smart.' Smart charge points can offer services such as:
 - remote charge point management,
 - access to real-time charging data and insights,
 - tools to optimise cost-efficiency of charging infrastructure,
 - automatic driver invoicing, and
 - where they are connected to the cloud, software updates.
- The length of the charge point warranty and what this covers.

Furthermore, groups, alongside site owners, should think about:

- If signage is needed to show a charging bay and how they might discourage non EV users from parking in allocated bays.
- If site owners can provide users with protection from the weather, toilet facilities, and food/ drink.

4. Feasibility

When finding a suitable site, groups will need to complete an initial feasibility study to work out project costs, as well as an idea of how much income a charge point might bring in for a site. A Charge Point Operator, installer, or project developer may help with this.

Once a site has been found and secured, a full feasibility study will need to be completed before applying for planning approval, grid connection and securing capital funding.

Groups should consider all costs and potential income to work out if the project is economically viable. Create a balance sheet to help with this.

If at this stage the project looks unviable it must be stopped or re-designed to reduce cost or boost income.

Costs: Consider all costs, making sure these are as accurate as possible and include: feasibility studies, community consultation, project development, planning, the equipment and installation, grid connection, commissioning, insurance, ongoing operations and maintenance, and any contributions going to a community fund.

Bear in mind, the electrical supply on site may need upgrading and cable runs may not be straightforward.

The cost of electricity to the site owner will also increase as a result of the use of the charge points. Some energy suppliers provide special tariffs where it is cheaper to charge at certain times (usually overnight), though these times may not be appropriate to those sites where visitors are present only in the daytime, and such tariffs may not always be available to commercial projects.

Income: If there is going to be a fee for charging, groups/ site owners/ Charge Point Operators should decide how much this will be. Groups might make assumptions about the use of the charge point to predict the return.

Alternatively, a site owner might offer charging for free or at a discounted rate, to encourage drivers to use their services (i.e. shopping centres, restaurants, leisure centres etc).

In future 'vehicle 2 grid' may also be a viable source of income, i.e. using electric vehicles for short term energy storage which can then discharge and sell power back to the grid. However, this is not yet commercially viable.

Additional support

- There are currently some grants available towards the capital cost of a charge point installation. Groups should check with the [Office of Zero Emission Vehicles](#), as well as their local authority which may have local EV charging initiatives.

5. Planning

It is a good idea to contact your local planning department early on to find out if you will need to submit a planning application for the installation of a charge point.

All planning applications for a charge point will require: drawings including existing and proposed site plans showing street features/ furniture, justification for installing the charger in the proposed location, and information on if the site is in a flood risk area, conservation area, near a listed building etc. Further advice on the level of information required can be obtained from the relevant planning authority.

Consider aesthetics, especially when installing in areas of natural beauty or heritage sites.

6. Grid connection

The site will need its existing electrical supply checked to make sure it is adequate to cope with the additional demand on it. If the supply needs upgrading then this will likely come at an extra cost.

The local DNO must be informed about all charge points before installation. UK Power Networks operate most of London's electricity distribution network. They have further information on installing EV charge points [here](#).

7. Charge Point Operators, eMobility Service Providers and installers

Charge Point Operators (CPO) install, manage, and ensure optimal operations of charge points and stations from one or more manufacturers. Moreover, they offer diagnostics, maintenance, price tariff management, and other value-added services to provide smooth network operation. CPOs may provide the connection to owners of EV charge points.

An eMobility Service Provider (MSP) is a company offering an EV charging service to EV drivers. MSPs help EV drivers find charging stations, start charging events and pay with various methods.

Some CPOs may also provide MSP services.

A charge point installer usually sells, installs and maintains charge points from one or more manufacturers to site owners.

A group may work with a CPO, installer or a project developer to help deliver an EV charge point project.

8. Operations and maintenance

The group will likely be responsible for the operations and maintenance of the charge point, for a certain length of time, or enter into an agreement with a CPO to help maintain it.

Monitoring: Groups need to think about how a charge point might be used, again deciding if it will be private or made available to the general public to use, and if use of the charge point will be on a first come first serve basis or if there will be a booking system.

Groups might be able to get access to some sort of monitoring platform to help them monitor and manage every charge, possibly from the manufacturer as a starting point.

Finances: Groups need to control access to charge points and set tariffs. Drivers may pay to charge via: pay as you go, a RFID card, or an app. Groups can work with a CPO and/ or an MSP to assist them with this.

Maintenance: There should be a maintenance agreement in place with an installer or a CPO. If the charge point is open to the public, any issues will need to be addressed in a timely fashion and customers should be notified if possible of alternative nearby charge points. Contracts with CPOs could include penalties or fines to ensure charge points are fixed within an acceptable time frame.

Groups may also want to talk to installers/ manufacturers/ CPOs about how to prevent misuse of charge points and theft of card details, and other personal data. As well as the safety of the charging infrastructure, particularly the electrical elements and what precautions need to be taken should the charge point be damaged or struck in an accident, for example.

9. Case study

[The Residents Committee at Holly Lodge Estate \(HLE\) in Highgate, North London](#) undertook a survey of residents on installing EV charge points. 67% of respondents believed EV charge points should be invested in, and 47% said access to a charge point on the estate would make them more likely to buy an EV.

A charging station was installed, with three charge points, all capable of delivering up to 22 kW/hr (kilowatts per hour). When more than one charge point is used at the same time, the charging rate reduces to 11 kW.

Genie Point has been contracted to administer the back office. Usage is restricted to residents and their visitors, who must register first with the service provider and then use a RFID card which will allow them to start a charge by tapping the card against a card reader. The cost of any electricity used will be charged to a resident's account.

Costs to residents include:

- £1 - Connection Charge
- Electricity supplied – 29p/kWh
- Overstay - £50 after 14 hours (to discourage drivers staying at charge points for too long)

The charging rate includes a premium to pay for the charging station maintenance, meter standing charges, the equipment investment, etc. Residents will get notifications of any cost changes. The estate hopes to recover their investment within 10 years.

As there are a limited number of charge points, users will be sent a message to move their cars, when required to.

10. Further resources

- [London's electric vehicle charge point installation guide](#) from Transport for London
- [Community Owned Electrical Vehicle Chargers report](#) from CEE
- [Charge my Street](#) is a community benefit society that installs and operates community charge points, and who are looking to install 200 charge points across the UK.
- EST's [Charging Electric Vehicles Best Practice Guide](#)
- The [CEL map](#) shows other community energy groups' projects in London.

11. Version control

Date of issue	03/07/2021			
Author	L Haskell			
Version no	1.0			
Amends	N/A			