



Usually, the decision to adopt electric vehicle charging provision is instructed by the asset manager and the process is coordinated by the property manager with input from the facilities manager.

Electric vehicle charging provision involves three primary steps.

## STEP 1: SITE ASSESSMENT

It is important that a site's characteristics, along with the associated opportunities and constraints, are clearly understood when planning electric vehicle charging provision. This should involve an initial review of a site, followed by a more detailed site survey and proposal.



### Site Review

The following elements should be considered to determine the appropriate scale and capacity of electric vehicle charging provision for a property in the short and longer term:

- The current density of electric vehicle vehicles registered in the local area using the DVLA's region and postcode district datasets.
- The typical dwell time on site to determine which sizes of chargers are required.
- Other chargers and charging speeds that are available in the area. For example, Zapmap lists all chargers across the country.
- The amount and location of spare power capacity on site which will determine the number of charges that can be accommodated and where they can be positioned.
- The local power network capacity to accommodate additional power provision to the site should the onsite power capacity be insufficient to meet the requirement.



### Site survey and proposal

Technical advice from a competent practitioner, for example a specialist consultant or electric vehicle charge point provider, will be required as part of a detailed site survey. The site survey should inform the development of a proposal to install electric vehicle charging facility, and may include the following:

- Proposed site redevelopment/refurbishment plans.
- Service drawings.
- Access to all power supplies on-site with up-to-date circuit schedules.
- Any power shutdown requirements that will lead to out of hours work.
- Number and type of parking spaces on site.
- Planned or potential installation of on-site renewable facilities.

## Asset type considerations

| Asset Type                | Car Park | Dwell time                                     | Chargers  | Other considerations                               |
|---------------------------|----------|--|---|--|
| Office (inner-city)       | Minimal  | Long   | Low capacity  |  |
| Office (urban)            | Large    | Long   | Low capacity  | Multi-storey options                               |
| Residential               |          | Long   | Low capacity  |  |
| Shopping or retail centre | Large    | Long (occupants)<br>Short to medium (visitors) | Low capacity - employees<br>Rapid and high capacity - visitors        | Visitor charging potential<br>Multi-storey options |
| Industrial sites          | Smaller  | Long   | Low capacity  |  |
| Warehouse                 | Smaller  | Long   | Low capacity  |  |
| Distribution centres      | Smaller  | Long (occupants)<br>Short (logistic vehicles)  | Mix<br>Low capacity - employees<br>Rapid and High - logistic vehicles |  |

### What is dwell time Perhaps as a box

Dwell time is the amount of time a building user spends on site, and is a key actor for assessing the right capacity of individual charging points:

- Sites with a longer dwell time that need to cater for multiple drivers: 7kW - 22kW capacity fast charging facilities are likely to be most appropriate. For example, residential, workplace, shopping centres, retail parks.
- Sites with a short dwell time that need to cater for a high turnover and fewer drivers: 50kW+ rapid charging are likely to be most appropriate. For example, industrial distribution sites, en-route sites and motorway sites.

## Dwell time considerations

| Dwell Time | Charger | Capacity | Consideration           |
|------------|---------|----------|-------------------------|
| Short      | Rapid   | 50kW+    | May require sub-station |
| Medium     | High    | 22kW     |                         |
| Long       | Low     | 7kW      |                         |

## STEP 2: REVIEW ELECTRIC VEHICLE CHARGING PROVISION PROPOSAL AND SELECT COMMERCIAL PARTNERS

During the review of a proposal for electric vehicle charging provision, and the selection of a preferred supplier, it may be helpful to consider the following questions relating to charging units, management and monitoring, and maintenance and warranty.

### Charging unit

- Does the supplier offer charging options and speeds (i.e., fast charging, rapid charging, media charging) appropriate to the needs of different sites in the portfolio?
- Has the supplier included sufficient scope for future expansion (i.e. additional trenching)?
- What types of electric vehicles can the charging units accommodate?
- Are the charge points accessible to all electric vehicles drivers - allowing for quick and simple access via an app or card payment? Can access be restricted if necessary?
- Are the charging units modular and smart enabled, to remain up-to-date with technology advancements?
- Are the charging units agnostic or specific to a certain supplier, enabling the client to switch operator in the future?
- Does the provider have Independent Connection Providers and Independent Distribution Network Operator partners that will help to engage with the relevant Distribution Network Operators to bring in new connections?
- Which party is responsible for requesting new connections and owning associated supply?
- Can charging units be load managed with an Array Charging System, which will enable the site to scale cost effectively with future demand and optimize available power on site?

### Management and Monitoring

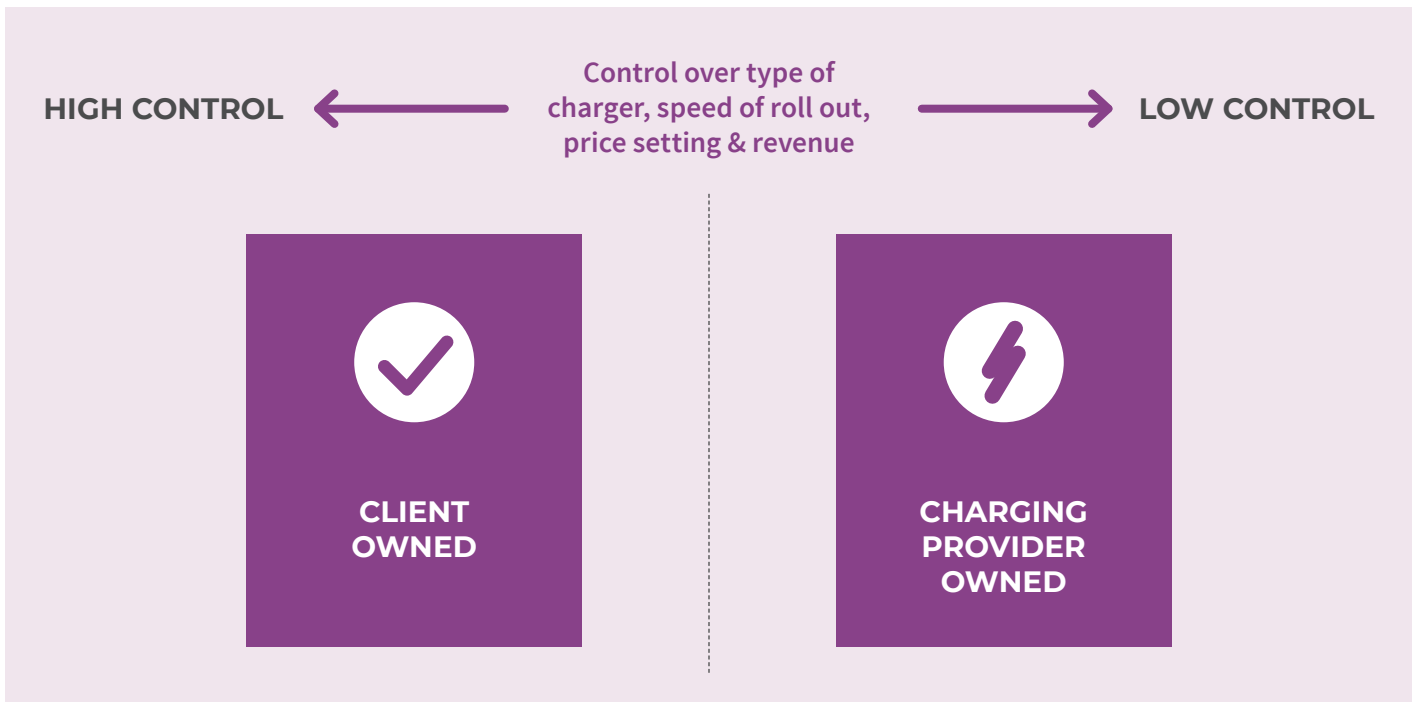
- Does this system allow portfolio power usage to be reviewed?
- Can the charging units be managed centrally through one system?
- Can faults be detected remotely and proactively fixed?
- Does the client have visibility of all charging units and charge cycles?
- Can the charging units be integrated with on-site systems?
- Can the client track how electric charging is making the site(s) more sustainable (CO<sub>2</sub> saved)?
- Can data be used to better understand unit utilization and when it is time to scale?
- Can the client apply a charging tariff through the management system?
- Can the client apply dynamic and complex pricing models across separate units and sites?
- What physical and software security features does the infrastructure and system have?
- Which party owns the data?

### Warranty and Maintenance

- How many months/years does the unit(s) warranty cover?
- Is there an associated cost with this warranty?
- What are the supplier's Service Level Agreements?
- What is the supplier's terming once the warranty is finished?
- Can most maintenance issues be fixed remotely by the provider?

### STEP 3: FUNDING MODEL

It is important to evaluate alternative funding models for equipment purchase, installation and operation. Most service providers offer outright purchase and/or fully funded models which have associated varying degrees of control.



#### Client-owned

The option to directly purchase charging units and cover the operational costs associated with electric charging provision provides greater control for the client. However, an agreement or partnership can still be formed with an electric vehicle charge point operator to provide supporting services during the scheme’s operation.

#### Pros and cons client owned charging units

| Pros   | Cons   |
|--|--|
| <ul style="list-style-type: none"> <li>• Full control of customer experience and tariffs.</li> <li>• Receive full share of revenue stream.</li> <li>• Any new power connections applied for to increase site capacity remains within the control of the applicant and in this case the client, not the electric vehicle charge point provider.</li> <li>• Opportunity to brand the charge points and create client’s own network.</li> </ul> | <ul style="list-style-type: none"> <li>• Full responsibility for capex and opex costs.</li> <li>• Careful consideration required to right size the type and number of chargers.</li> </ul> |

## Charge provider-owned

The option for electric vehicle charge point providers to provide a fully funded options, which usually covers surveys, installation, unit costs, maintenance and any future upgrades for the duration of the agreement, provides limited control for the client. However, visibility of utilisation and ability to receive a share of information can still be retained as part of the scheme.

### Pros and cons of provider-owned charging units

| Pros  | Cons  |
|---|---|
| <ul style="list-style-type: none"><li>• No upfront investment required.</li><li>• Little to no opex costs.</li><li>• A potentially faster route for installing chargers before there is a saturation of chargers in the local area.</li><li>• Visibility within the chosen electric vehicle charge point provider's existing subscriber and user network to drive footfall.</li><li>• Opportunity to receive income through profit sharing or a rental agreement with the electric vehicle charge point provider.</li></ul> | <ul style="list-style-type: none"><li>• Limited share of the revenue stream.</li><li>• Little to no control of the type and size of chargers.</li></ul> |

## Government Funding

The Workplace Charging Scheme (WCS) provides a subsidy towards the purchase and installation cost of a new workplace charging station by up to 75% (capped at £350per socket). Businesses can claim for up to 40 charging stations (40 single socket or 20 double socket) under the scheme, which is managed by the Office for Low Emission Vehicles (OLEV).

## Service Charge

The way in which occupier service charges take account of shared services may impact the extent to which electric vehicle charging provision can be charged to the individual user. This should be considered at the leasing stage, see the BBP Green Lease Toolkit.

## Benefit in Kind

The provision of electricity for employees to charge private cars is classed as a Benefit-in-Kind, i.e., a non-financial benefit which employees receive from their employer in addition to wage or salary.

Benefits in kind are considered as income by HMRC and should be included within an individual's annual tax return. While at present, charging private electric vehicle charging at work is tax exempt, this may change in the future as electric vehicles become more common-place.

## OTHER CONSIDERATIONS

The following factors should also be taken into account when considering electric charging provisions.

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### Net zero carbon

Installing electric vehicles charging is likely to increase a site's electricity consumption. Procuring electricity via a high-quality green tariff or renewable source offers the potential to reduce operational greenhouse gas emissions.

### Greenhouse gas emission scopes

| Emission category | Stakeholder relevance | Details  |
|-------------------|-----------------------|--|
| Scope 2           | Asset Manager         | Electric vehicle charging provision will increase electricity demand and associated greenhouse gas emissions.  |
| Scope 3           | Asset Manager         | Asset managers should consider the embodied carbon associated with electric vehicle charging equipment, infrastructure and installation.<br><br>Asset managers should consider the greenhouse gas emissions associated with an occupier's employee commuting to work as part of a net zero carbon framework. |
| Scope 3           | Occupier              | Occupiers should take account of the the greenhouse gas emissions associated with their employees' commuting emissions as part of a net zero carbon framework.   |

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### User experience

It is important to consider the all-round experience of those using electric vehicle charging facilities. This may include:

- Checking that charge points are operating safely and are tested and inspected regularly.
- Considering how the design features, for example, the height of the charge point and the parking space size, allow users with all accessibility requirements to operate the charger.
- Locating charge points in a visibility area and providing signage for easy wayfinding.