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Business guide to EV charging infrastructure

May 2024



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Time to put EV charging on your agenda?

As electric vehicles (EVs) grow in popularity, organisations have to think more about their on-site charging facilities.

Currently, many businesses associate on-site charging infrastructure with just fleet vehicles. But introducing reliable, accessible and affordable charging for **all** employees is crucial for long-term EV adoption.

Of course, this infrastructure comes with significant investment. So careful planning is critical – both to accommodate current EV drivers and to help future-proof your workplace.

This guide sets out a path for doing all that and more.



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Figure out your business needs

The first step? Consider what the charging infrastructure will be used for.

Many organisations install on-site charging infrastructure due to EV-friendly company car schemes. However, as EV adoption steadily rises, it's important to keep in mind that this infrastructure can also benefit other employees and visitors.

Charging infrastructure for businesses tends to take two forms:

Depot charging

Operational fleet charging (usually for commercial vehicles).

Workplace charging

For the use of all employees and office visitors.



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How many charging points do you need?

There's no 'one size fits all' answer to this question. Most of all, it's smart to look at your current need *and* your future requirements – especially as EV adoption grows.

The number of charging points needed is typically down to these factors:

- The potential number and type of vehicles that will be charging
- When vehicle charging is required
- Available space
- How much power the organisation can access
- Available budget



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Depot charging vs workplace charging

Depot charging

For depot charging, the number and type of charging points needed should be determined by how much power the fleet requires.

Organisations will need to work this out, as well as when this power will be used.

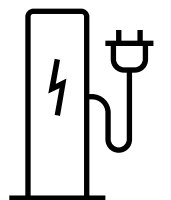
Plus, understanding each vehicle's driving profile – accounting for mileage, energy usage, operational hours and daily charging opportunities – is also essential.

Workplace charging

Workplace charging isn't an operational requirement and there's no obvious path for implementation. Usually, budget and parking space availability are the most important factors.

Plus, as EV adoption grows, knowing how many of your employees tend to work on-site will be crucial for anticipating future demand.

It's also worth keeping in mind that some employees with EVs might primarily charge up at home.



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Create infrastructure that lasts

Factoring in future EV adoption is a must. As the UK government's ICE (Internal Combustion Engine) ban for 2035 approaches and more EVs hit the road, demand for workplace charging will inevitably go up. So it's best to make plans now.

In fact, installing additional chargers upfront is often more cost-effective – even if they're not activated straight away. Or to get ahead, your business could just install the cabling for additional charging points. And if possible, it's also a good idea to speak with a charging expert to figure out how many charging points you'll probably need.



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1 Get the right charging equipment

AC vs DC charging

It's important to figure out which type of charging equipment your business needs.

Who will be using the charging points? Why will they need to charge? And how long will they need access? These are all good questions to think about.

Charging infrastructure falls into two main categories: AC charging and DC charging. (Keep in mind that some organisations find that a combination of AC and DC charging points is more flexible and works better for different drivers.)

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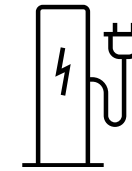
AC charging

Typically 7kW, 11kW or 22kW

AC charging is typically suited for vehicles with long dwell times or depot charging for fleet vehicles parked overnight.

For overnight charging, which generally takes 10+ hours, 7kW chargers will be enough for most vehicles. However, for workplace charging, it's good to have 11kW (or even 22kW) chargers so more vehicles can charge during the day.

Plus, a half-day charge on an 11kW charger will provide around 150 miles of range, which suits at-work charging for more than one driver.



DC charging

Ranging from 25kW through to 350kW

For shorter dwell times, such as for visitors to the office, fleet vehicles on a quick turn-around or fleets with more complex charging requirements, faster, DC charging might be better.

But generally, the higher the power, the more expensive the charging unit. And DC units, particularly the higher power systems, can be significantly more expensive than AC charging.

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Tethered vs untethered charging

Tethered charging units incorporate the charging cable into the charge point and are generally popular with home charging. By contrast, **untethered charging units** just have a socket – so drivers must use their own charging cable. This is the standard setup for AC charging points in public spaces.

All DC charging points are tethered units (due to their higher voltage). However, when installing AC chargers, businesses should consider whether tethered or untethered charging is best.

For workplaces

In a workplace car park, untethered, universal sockets tend to be the norm. This is because EV drivers will carry their charging cable in their car, and the solution caters to different vehicle charging sockets. It also minimises the damage risks associated with tethered units, where the charging cable or connector can experience wear and tear, and cables can be dropped or left on the ground, or even misused or vandalised.

For depots

For depot charging, the risk of damage is still a factor. However, it can still make sense to install tethered units in these locations. After all, fleet vehicles are often used by many drivers. So there's a higher risk of cables going missing and causing charging delays, which may necessitate the additional expense of stocking spare cables on site.



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Stay in control with a CMS

Introducing a charging management system (CMS) as part of the installation process is paramount.

A CMS can monitor the condition of each charger, its current state and general energy use. The management system also gives a holistic view of charging behaviour and can be used to control charger access.

Setting a tariff matrix is also possible – so different rates can be established for employees, suppliers or customers. Likewise, variable rates based on peak/off-peak times of the day can also be set. Plus, the CMS can manage any billing and payment processes, which cuts down admin time.

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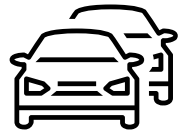
2 Work out what your business can handle

Be clear on electrical capacity

Crucially, sites need sufficient electrical capacity to manage the additional load of EV charging. So to prevent disruption to everyday business, charging capability should never exceed supply.

When planning the infrastructure, it's key to understand:

- The size of the grid connection and electricity supply to the site
- The power demand from current business activity
- The current available electrical capacity
- The additional power required (and when) for the charging infrastructure

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Know what's involved

An installation expert can help you assess your capacity, the likely costs, what can be installed without upgrading the grid and how much additional capacity might be needed to future-proof the installation.

Historically, it was often too expensive for organisations with limited electrical capacity to upgrade their network for charging point installation. The bulk of the costs were due to expensive grid upgrade work.

However, following new rules from Ofgem in April 2023, 'demand' customers no longer have to pay for a grid upgrade if their charging installation takes their site over the capacity limit available. Instead, upgrade costs will largely be paid for by the Distribution Network Operators. This allows smaller businesses, or those who found grid upgrades cost prohibitive, to move forward with their installation.

Cover all your bases

A load-balancing management system is also recommended to make sure organisations don't exceed their supply. Alongside this, there are ways to mitigate against any electrical capacity limitations by incorporating a battery storage system or solar photovoltaics.

Solar charging canopies can be an effective way to provide additional power to chargers, and they also protect employees from the rain while car park charging points are in use. But to be truly cost-effective, a solar canopy may need to cover wider sections of a car park – beyond just the charging bays.

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Find the best charging locations

When it comes to choosing charging point locations, available parking spots and the proximity of the electrical supply to the site are two big factors.

From a cost perspective, a lot of the project cost comes from the groundworks and cable installation, rather than the charging hardware. So minimising the distance from the electrical cabinet to the chargers can help to lower costs.

From a safety and accessibility perspective, depot and workplace chargers should be installed in well-lit, visible, convenient and accessible locations and also include disabled access for some or all of the chargers. The British Standards Institute (BSI) has published the [EV Accessible Charging Standard \(PAS 1899:2022\)](#) to help make sure that charging installations are inclusive and accessible for all.

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Set up regular maintenance

A scheduled maintenance plan can guarantee that the chargers are kept in good working order.

Maintenance checks should be looking for damage to the charging unit, sockets and cables (including both the power supply cable and tethered charging cables). The charging point software should also be kept up-to-date.



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3 Build the business case

Get ahead on the legislation

Although the government has stipulated that no new petrol or diesel cars or vans can be sold from 2035, there's currently no legal requirement for employers to install business charging points.

That said, the Zero Emission Mandate means that more EVs will hit the road ahead of 2030. So alongside company car fleets rapidly switching to EVs, the number of employees and individuals driving EVs is set to grow significantly in the coming years. As that happens, easy charging point access at work will become a more desirable benefit.

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Understand the benefits

For depot charging, the business case is clearly focused on operational need. Without it, back-to-base fleets will struggle in their transition to EVs.

By contrast, workplace charging is less clear. That's why the business case should focus on the benefits for the company. These benefits can include:

- The potential to improve organisational recruitment and retention
- Making EVs more accessible to all employees, particularly those who would be unable to access home charging
- Reducing the organisation's carbon footprint, including both Scope 1 and Scope 3 emissions
- Enhancing sustainability credentials

Consider other costs

There are also upfront installation costs that need to be factored into the business case. However, there is still (until March 2025) government funding available through the Workplace Charging Scheme (WCS). The WCS is a voucher-based grant, which covers up to 75% of the total cost of the purchase and installation of EV charging points (inclusive of VAT), capped at a maximum of:

- £350 per socket
- 40 sockets across all sites, per applicant

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Write an EV charging policy

A comprehensive EV charging policy should include a clear set of guidelines to increase the adoption of workplace charging. It must also encourage proper use of charging equipment and establish good charging etiquette from the outset.

The policy should apply to employees, fleet vehicles and visitors and give clear guidance on:

**Aims and objectives
of the policy**

**Location and
description of the
available
charging points**

**How to access the
charging points**
(RFID cards, app,
employee registration, etc.)

**Use of a
booking system**
(if applicable)

**Charging costs /
how to pay**
(if applicable)

Charging times

Fault reporting

Charging etiquette

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Should you charge to charge?

Generally, workplace charging is provided free of charge to incentivise EV adoption among employees. Equally, free-to-access chargers require less business admin.

However, when workplace charging is provided at no cost to employees, many EV drivers will choose to use the infrastructure – regardless of their car’s charge level or the utility of their home facilities. This can lead to excessive demand and create potential issues around charger utilisation and availability.

Charging even a small fee for the use of workplace chargers can alleviate this issue. And it means that specific employees who rely on the chargers every day can always have access. (For instance, employees who are unable to charge at home or have longer commutes.)

Simplify billing and payments

Adding a cost for employees to use chargers can also support the financial business case and help to fund ongoing maintenance costs.

To do this, a billing or payment system can be introduced via CMS software or even an app. And when deciding on a payment system, businesses should choose one that allows different tariff rates to apply to different users: employees, operational fleet vehicles, customers and suppliers, etc.

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How will workplace charging evolve?

If standardised in the future, bi-directional charging could make workplace charging even more beneficial.

Unlike uni-directional charging, which allows electricity to flow from the grid to an EV, bi-directional charging makes it possible for EV drivers to take the electricity stored in their vehicle batteries and send it back to the grid. This helps to balance spikes in demand and to stabilise the power grid. Plus, bi-directional charging can enable many more chargers to be installed in car parks.

Essentially, EVs are mobile battery storage units. So a workplace charging facility that incorporates bi-directional chargers also opens up new opportunities to increase the power supply to the site.

For instance, drivers who can charge their EVs at home overnight (on a low-rate off-peak tariff) can sell their energy back to their employer. This energy could subsequently be used to charge other EVs or provide additional power to the building, thereby increasing the power capacity available.

Combined with a solar car park canopy, the opportunities for a fully integrated energy system are very exciting for your business.



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Charged up? Here's your next move

We hope you have a clearer picture of what it takes to set up EV charging infrastructure. If you'd like to go even deeper on any of the topics covered in this guide, just get in touch with our friendly team today.

[GET IN TOUCH](#)