energy saving trust

EV charging for multi residential units

Guide to the Electric Vehicle chargepoint scheme for residential landowners

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Contents

Electric Vehicle Chargepoint Scheme

Practical aspects of installation

Scheme overview

Demand for electric vehicles (EVs) is rising rapidly, accelerated by many cities introducing Ultra Low Emission Zones and the end of sales of petrol and diesel vehicles approaching in 2030.

It is more convenient and cost-effective to charge an EV at home. Residents in flats and apartments, who do not benefit from private driveways, will seek properties with chargepoint provision.

To support the transition to EVs for all, including these residents, the Office of Zero Emission Vehicles (OZEV) has revised the current Electric Vehicle Chargepoint Scheme for landlords to fund chargepoint installation in multi residential units and for tenants. The scheme was launched on 1 April 2022.

EVHS will close to homeowners with a driveway on 31 March 2022.

Summary of funding available

Funding is available only to existing multi residential properties and not new builds. There are three funding offerings:

1. Individual residents / tenants	2. Entities	3. Entities
Residents in flats (owned or rented) and rental accommodation qualify for up to £350 per person towards the cost of installing a chargepoint. ▪ The applicant must have a qualifying electric vehicle to apply for the grant.	Non-resident building owners qualify for £350 per socket, with a limit of 200 applications per year per applicant. ▪ Multi residential units with less than five parking spaces, or ▪ Single unit houses with dedicated off street parking (parking lots/garages) on leasehold land.	Owners of apartment blocks can apply for up to £30,000 per building, with a limit of 30 applications per year per applicant. ▪ Up to £500 per bay for passive installations (enabling underground infrastructure only). ▪ Up to £850 per bay for active installation (enabling underground infrastructure and chargepoint). ▪ Minimum of five bays must be provisioned, at least one with chargepoint (active installation).

Applicant criteria

Who can apply?
✓ Residents in flats and rental accommodation
✓ Freeholder of the property
✓ Leaseholder with freeholder's consent
✓ A resident management company
✓ Local authorities
✓ Housing associations
✓ Private registered provider of social housing

- Freeholders, who are individuals, cannot apply for the grant.
- The applicant must be a registered company, housing association or local authority in case of entities.
- If the applicant is a company, they must provide their Company number or VAT registration number (if VAT registered).
- If they are linked to an enterprise, they must mention the linked enterprise details. The link of 200/30 applications is at the linked enterprise level.

Site selection – communal vs dedicated bays

- In multi residential unit properties, it is common to install chargepoints in communal bays, rather than bays dedicated to particular units. This is because not every resident will need to charge an EV every night.
- Using communal bays reduces the number of chargepoints required to be installed, reducing power demand and cost.
- **Ownership:** If the installation is done in communal bays, the infrastructure is likely to be owned by the applicant (freeholder or resident management company). Alternatively, if installed in dedicated bays, there is an option for the resident to own the chargepoint.
- **Maintenance contracts:** Standard maintenance contracts are usually longer for chargepoints in communal bays than dedicated bays.
- **Tariff charges:** The tariff is likely to be marginally higher for communal bays as charges for maintenance can be included.

Chargepoint options

Chargepoint type	Power (kW)	Indicative unit cost
Slow AC	Up to 7kW	£650-2,000
Fast AC	7 - 22kW	£1,500-3,000
Rapid DC	43 - 50kW	£15,000-25,000

Why are rapid chargepoints not recommended for residential charging?

Rapid chargepoints are not suitable for every charging situation. Faster is not always better. For a resident charging overnight, a slow chargepoint is sufficient and avoids residents having to move an EV during the night when finished charging.

- An individual rapid chargepoint is expensive.
- Installing rapids will increase electricity connection costs.
- Rapids have higher tariff rates.
- Rapids have higher maintenance costs.
- Installing rapids will likely mean installing fewer chargepoints, leading to queues from residents waiting to use a chargepoint.

Physical designs

Wall mounted chargepoints

Suitable for enclosed car parks to avoid clutter on ground

Post or pedal mounted charegepoints

Mounted on a post or pedal to avoid damage to chargepoints

Free standing chargepoints

Installed on the surface above underground infrastructure

Physical designs

Low impact visual infrastructure
The chargepoint is under the ground and equipment (as shown in right) is used to connect the chargepoint to the car to charge. This type of infrastructure is fairly new to the market.

Cost guide

Chargepoint hardware	A 22kW and 7kW chargepoint unit is likely to cost around £2,000 and £1,000 respectively.
Power supply costs	The higher the chargepoint power needs, the higher the electricity grid connection costs. Power supply costs would also vary depending on whether the property has single or three phase electricity supply. It is not possible to install higher powered chargepoints where there is single phase supply without upgrading the electricity grid, which will be a significant cost.
Installation costs	This varies with the amount of digging and trenching required. The further the chargepoints are from the power supply, the higher the costs. To reduce future installation costs, more enabling infrastructure can be installed (passive installation) at the same time as installing chargepoints (active installation). As chargepoint demand rises, chargepoints can be added to the passive installations, making them active. This avoids further digging and trenching costs.
Underground car park costs	Underground car parks need internet cables for chargepoints to operate. This could be an additional cost.
Admin costs	Consider the cost of resources allocated for the ongoing management of the chargepoint infrastructure for residents.

Tax benefits

Businesses can potentially claim 100% of the costs of installing an electric vehicle charging point as a capital allowance.

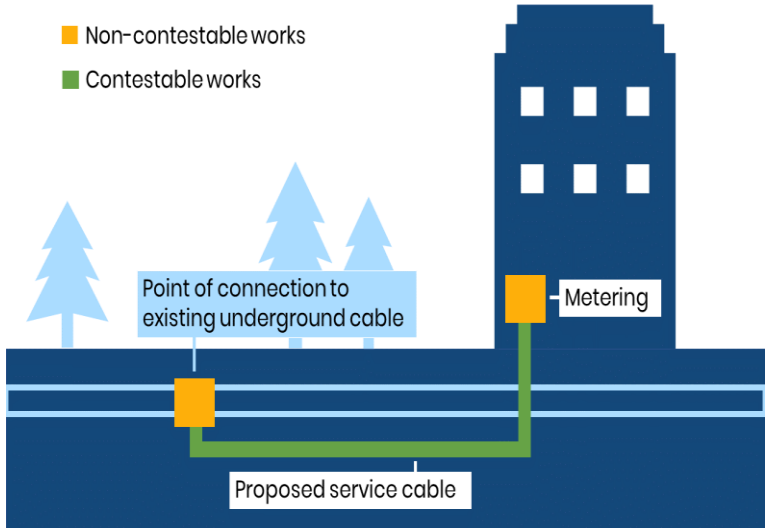
The capital expenditure may also qualify for the new super deduction, equating to a 130% enhanced deduction of the total cost.

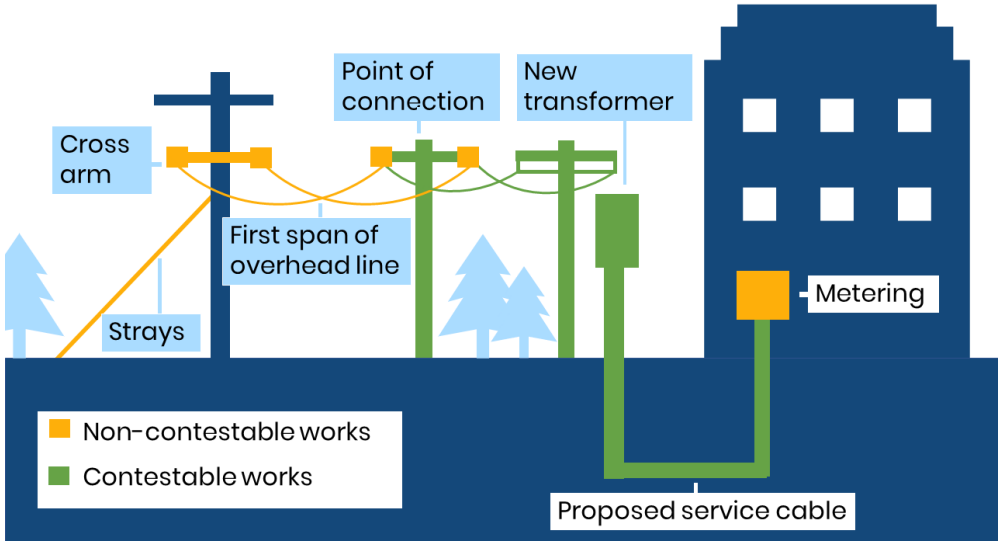
Connecting chargepoints to power supply

- A **District Network Operator (DNO)** is the company that owns and operates the infrastructure that delivers electricity to the end user. A DNO needs to be contacted to provide additional power supply for the chargepoint infrastructure.
- **An IDNO (Independent DNO)** is similar to a DNO but operates a smaller area and transmits electricity from the grid or another DNO to the end users.
- Use this link to find the DNO for your area. The DNO and IDNO are required by law to offer connection services to anyone who asks for it.
- Usually, the chargepoint operator interacts with the DNO and will assess the power needs for multi residential properties.

Contestable and non contestable costs

- A DNO quote will be in two parts – **contestable and non contestable works.** Contestable works are the elements of the connections work that can be done by an Independent Connection Provider (ICP). Non contestable work is work that can only be done by a DNO for the safety and security of the distribution network.
- ICPs are companies accredited to build electricity networks as per agreed standards. They are often approached in EV chargepoint installation **to lower connection costs.**





How to apply for a DNO quote

1. Find your building cut-out rating

A cut-out is an electrical equipment, usually located next to the meter. This equipment helps to assess the power supply into the property. If the cut-out rating cannot be ascertained, the DNO can be contacted to establish the cut-out rating.

2. Find your current maximum demand

Your maximum demand is the highest amount of electricity used at the premises. This can be found from your building's smart meter or previous electricity bills. This maximum demand, together with the expected demand from chargepoints, will help assess whether your power supply is sufficient or if it needs increasing.

3. Assess power needs

It is the responsibility of the installer to ensure that maximum demand and the potential demand of the chargepoint infrastructure is stated correctly. Impact of load management system and smart chargepoints on reduced power connection needs are to be considered too.

4. Contact your DNO

Contact your DNO to apply for the electricity grid connection. Depending on the number and/or power of chargepoints being connected, the DNO may ask for additional information.

5. Receive DNO quotes

Your DNO will provide quotes with contestable and non contestable works. ICPs can be contacted for the contestable work to obtain competitive prices for the work.

Optimising power supply

There are ways to optimise your building's current power supply to avoid expensive grid upgrade costs.

- **Load management:** This either limits the supply to the chargepoint infrastructure (static load management) or manages the supply to the chargepoint infrastructure, according to the building's non-EV electricity demand (dynamic load management). This ensures that chargepoints charge EVs with the highest possible power available and least possible impact on supply.
- **Smart charging:** This software schedules EV charging for when electricity demand on the national grid is lower, such as at night. This can lead to lower tariff costs. Find out more about smart charging.
- **On-site generation and battery storage:** On-site generation of electricity (eg through solar panels) and battery storage enables the production and storage of electricity to charge EVs. This reduces dependency on the grid and leads to lower connection and tariff costs.

Qualifying points to help choose an installer

Futureproofing – This will ensure that the chargepoint infrastructure is suitable and efficient in the future as much as possible. It involves:

- Futureproofing connections: passive installations, increasing building power supply and opting for load management can allow for increasing charging capacity as EV demand rises.
- Futureproofing chargepoints: ask installers about processes to upgrade chargepoint hardware and software. Chargepoints interoperable with any electricity supplier are preferrable.

Maintenance - Enquire about proactive and reactive maintenance.

- Proactive maintenance: enquire about the coverage, cost and frequency of regular maintenance. Sometimes this will be done by a third party instead of the installer. In this case, understand the responsibilities of all parties.
- Reactive maintenance: find out how quickly chargepoints will be repaired or replaced when broken and understand this procedure.

Qualifying points to help choose an installer

Reimbursement of landlord's supply: Electricity for charging EVs may be billed by the chargepoint operator (CPO) to residents. As the building's electricity is used to charge EVs, the CPO then needs to reimburse the landlord. Ask the installer for a demonstration of this process.

Load management: This is the ability to manage the demand from the chargepoint infrastructure with the highest possible power made available for charging, keeping the least possible impact on the supply/grid. There are two types of load management:

- Static load management: The power available to the chargepoint infrastructure is pre-set and is equally distributed to the chargepoint outlets. This system is easier to implement.
- Dynamic load management: This offers greater optimisation of available power. It manages the supply to the chargepoint infrastructure (number of cars, how much time is left to full charge, amount of charge in the car) according to the building's non-EV electricity demand. It could be relatively expensive to install with additional software management and cabling, however it could result in lower overall costs for the chargepoint system.

Qualifying points to help choose an installer

Signage and bay marking: Discuss this with the installer to ensure that EV bays are not occupied by ICE or non-EV vehicles and that all EV residents have space when they need to charge their car.

A queuing system is helpful if the EV bay is occupied for charging. The next resident in the queue can be notified when the bay is empty.

Warranty on chargepoints and installation: Question where the chargepoint hardware is made, the warranty on parts, and how they will be replaced, particularly in the event the chargepoint goes out of production. Question the installation warranty and what it entails, including materials/labour and costs.

Smart chargepoints: There is no standard market definition for a smart chargepoint.

Ideally a smart chargepoint is one that can respond to signals or other information received by:

- Increasing or decreasing the rate of electricity flowing through the chargepoint.
- Changing the time at which electricity flows through the chargepoint.

Query the ‘smartness’ of the chargepoint with the installer to ensure that truly smart chargepoints are installed.

Qualifying points to help choose an installer

End of life: When a chargepoint reaches end of life due to any reason (broken/damaged or obsolete), discuss how it would be dealt with – for example, replaced, upgraded or decommissioned.

The installer or chargepoint operator can provide options for replacement, upgrade or decommission of the old chargepoints.

It is recommended that you approach at least three installers so that you can compare and get a competitive offering.

For local authorities:

Local authorities can make use of frameworks, similar to the On-Street Residential Chargepoint Scheme (ORCS), to choose vetted suppliers. While ORCS can still be used to install chargepoints in housing estates by local authorities, it is only applicable for communal parking bays and active chargepoints.

EVHS can be used to provide for passive bays and installation in dedicated bays in the council's housing estates.

Further information

Energy Saving Trust webinar recordings - Residential landowners Electric Vehicle Chargepoint Scheme - Energy Saving Trust

List of approved installers - Electric Vehicle Homecharge Scheme: authorised installers - GOV.UK (www.gov.uk)