




Getting electric vehicles moving

All you need to know about getting an electricity connection for your fleet

Supporting the growth of electric vehicles

The use of electric vehicles (EVs) is on the rise and they are fast becoming commonplace. EVs are expected to play an important role in achieving the UK's targets for improving air quality and reducing carbon emissions. Just six years ago there were only 2,500 EVs in the UK – now there are almost 100,000 and that number is predicted to continue to increase. We recognise that fleet operators may wish to explore the electric option when renewing/replacing their fleet, as your local electricity network operator, we want to support you through your transition to EVs.

This guide lets you know:

-  Why we need to know when you're planning to make your fleet electric
-  What you need to consider when you're planning to make your fleet electric
-  The connection process for getting a new or upgraded electricity supply for your fleet



Why we need to know when you're planning to make your fleet electric

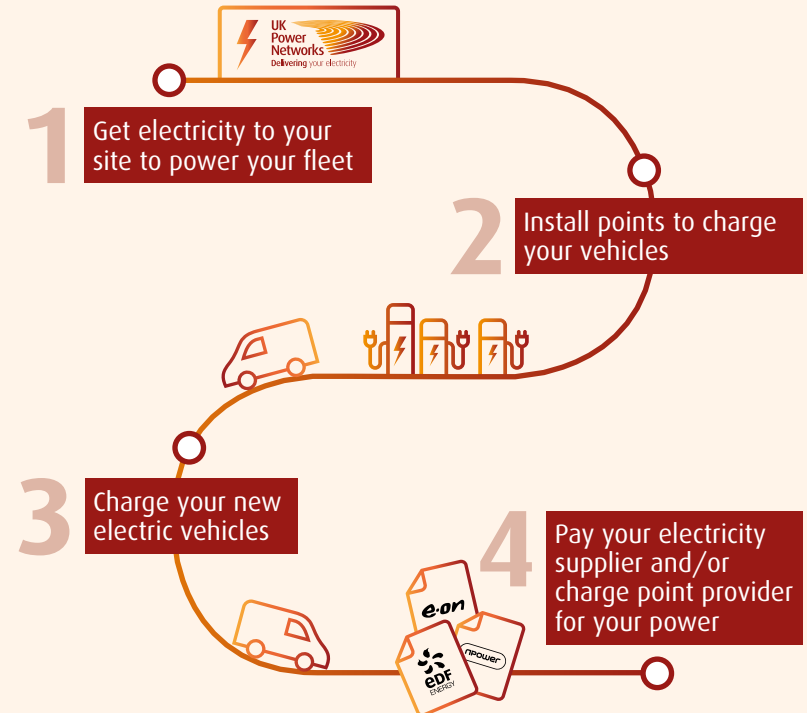
Who is UK Power Networks?

UK Power Networks owns and maintains the electricity cables and lines that bring the electricity to more than eight million homes and businesses across London, the South East and East of England. We run and maintain the electricity cables in your area and keep the lights on, regardless of which electricity supplier you pay your bills to.



We distribute the electricity that will supply your fleet.

Getting your fleet ready to be electric



What you need to consider when you're planning to make your fleet electric

To charge your electric vehicles we need to provide you with enough power when you need it. How much it costs to power an electric vehicle fleet with the electricity network and how long it will take to install comes down to three things.



Type and mix of charging required; slow, fast or rapid



How many vehicles will be charged at any one time?



What time of day will you be charging your fleet?

How long does it take to charge an electric vehicle?

There are three types of charge points: **Slow**, **Fast** and **Rapid**. The speed that cars can charge at is determined by how much electrical power (kW) the charge point delivers:



8HRS

Slow

(up to 3kW) which can charge most EVs today in 8 to 10 hours



2HRS

Fast

(7-22kW) which provide a full charge to most EVs in 2-5 hours



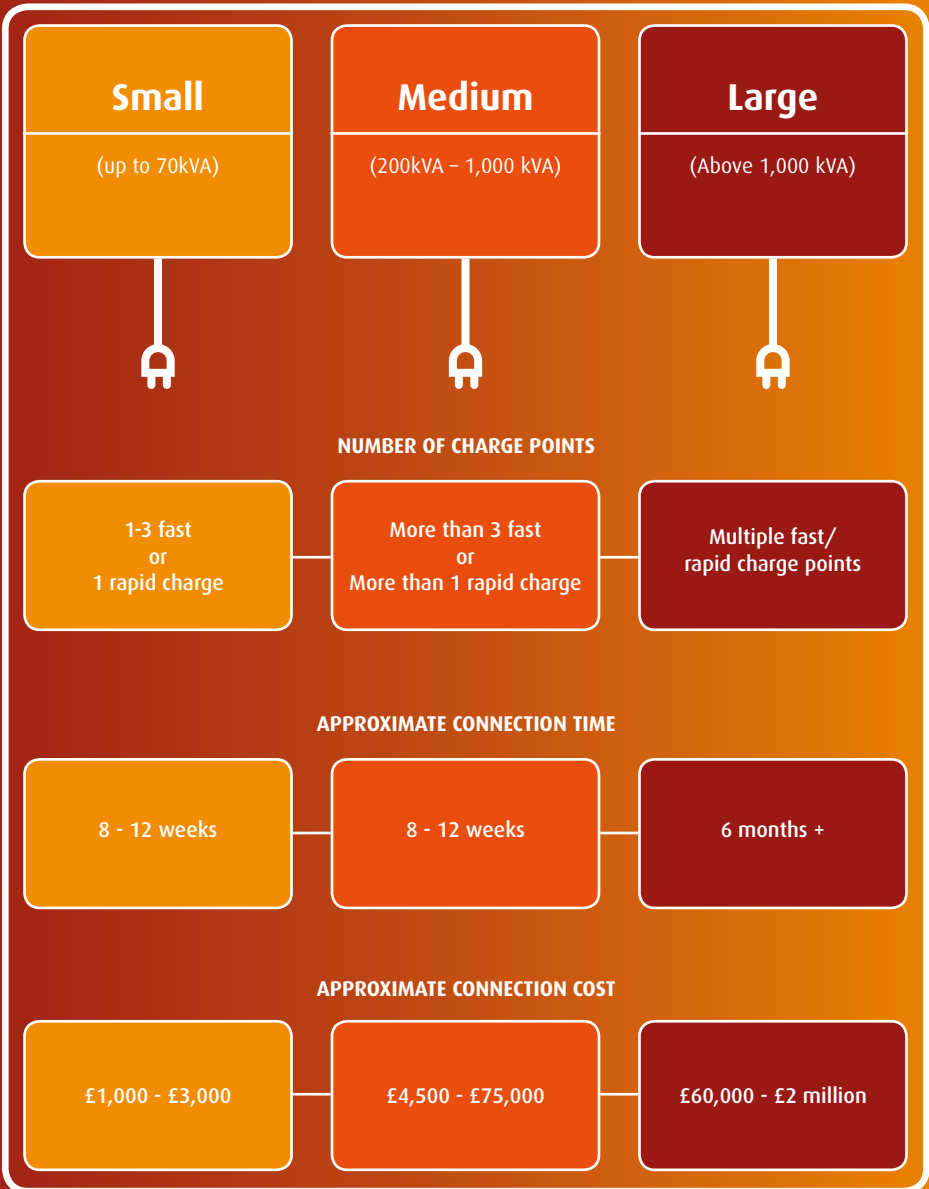
0.5HR

Rapid

(greater than 43kW) which are able to provide an 80% charge in around 30 minutes

How long does it take to get an electricity connection?

We describe new electricity connections as Small, Medium or Large. This section explains the costs and time for the power supply to be connected to different types of charge points



The connection process for getting a new or upgraded electricity supply for your fleet

To ensure we can meet your power requirements we may need to assess the local electricity network. For larger projects, we may need to build new infrastructure, this will affect the time and cost of your works.

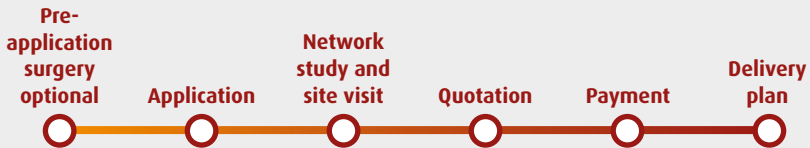
Small On average an 8-12 week process



Apply via our website at ukpowernetworks.co.uk



Medium and large On average a 6 month process



Arrange an appointment at asktheexpert@ukpowernetworks.co.uk



Case study

We want to help you electrify your fleet. Through early engagement we can help you identify the most efficient way to get power to your site. This case study will help you understand how, by working together, we can meet your needs.

Waterloo bus garage

Challenge: The Mayor of London and Transport for London want to significantly reduce carbon emissions and improve air quality in London and electrifying public transport, including the bus fleet, is an important step in this journey. However, there was not enough power available at the Waterloo bus depot to charge all of the buses. Traditionally this would require UK Power Networks to upgrade the supply at the bus garage so that it could provide the customer's maximum power requirement at any time of the day. The local high voltage network however did not have sufficient capacity for this and a reinforcement project would only be able to provide sufficient capacity 9 months later than the required power on date. A traditional design would be expensive and take time to deliver and therefore delay the roll-out of the new bus fleet.

Solution: The bus routes at Waterloo Garage typically operate from 5am - 11pm, with charging required outside this time period when the electricity demand by other customers in the area is low. The solution was to adopt a new approach called timed demand connections, which allowed the customer to draw their maximum power requirement of 2.5 megawatts in the off peak hours and also draw a reduced capacity of 0.5 megawatts during the day for charging a smaller number of standby buses and those buses which may need topping up charge during the day. The approach promised savings for customers as they did not have to pay for costly network upgrades in order to achieve the maximum power requirement at all times of the day. The connection meant the customer only needed power during a specific time window when the network is not fully utilised by other customers.

Outcome: We delivered 2.5 megawatts of electricity to the garage without the need for immediate upgrade to the electricity network. The first nine of a fleet of 51 single decker buses, which run on electricity and charge up at Waterloo bus garage, were officially unveiled there by Deputy Mayor Val Shawcross in September 2016. All buses are now operational.



FAQs

Do I always need to involve the network operator when I electrify my fleet?

Yes, early engagement with the network operator and a qualified electrical contractor can help identify whether your current site has adequate capacity to meet your charging needs. If there is enough capacity from your existing supply, no network reinforcement work is required.

How much does an electricity connection cost?

Depending on how many vehicles you want to charge and how quickly you want to charge them, it can range from £1,500 for a single slow to fast charge point, to £2 million or more for a cluster of rapid charge units. That's why we're really keen to work closely with local authorities and charge point operators to help you find the right solutions for your residents and businesses.

How can I find out more?

To find out more visit our website at www.ukpowernetworks.co.uk or email electricvehicle@ukpowernetworks.co.uk

How are you preparing for the future?

Our Innovation team love to trial new ideas that can save people money, improve the reliability of power supplies or increase safety, and we have a track record of turning successful trials into business as usual. If you have an idea for any other projects then contact us at the email address below.

What does UK Power Networks know about smart charging?

Smart charging can help reduce costs for customers as well as manage demand on the network.

We connected Europe's largest electric-only bus garage and are working with one of the world's biggest logistics companies on a project to build one of the biggest freight vehicle charge points in London. In Kensington & Chelsea we have converted streetlights into electric vehicle charge points.

**If you have any questions please get in touch via:
electricvehicle@ukpowernetworks.co.uk**



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