

## What is the Charge Project?

The Charge Project is an exciting initiative from SP Energy Networks, delivered in collaboration with EA Technology, PTV Group and Smarter Grid Solutions, which aims to accelerate the UK's transition towards electrified transport.

It's also a vital part of SP Energy Networks' commitment to help the UK achieve net zero by 2050.

Running for four years throughout Merseyside, Cheshire, North Shropshire, and North and Mid Wales, the Charge Project will – for the first time – merge transport and electricity network planning together. It will create a comprehensive map of the region that identifies where EV chargepoints are needed and can be best accommodated by the electricity network. It will also pioneer Smart Charging Connections to accelerate chargepoint installation.

## New report: Charge Transport Model delivers first-of-its-kind insight

The latest output from the Charge Project is its Transport Model Report, which outlines what a transport model is, how the one we have deployed as part of ConnectMore was built, and what it has helped us to understand and discover.

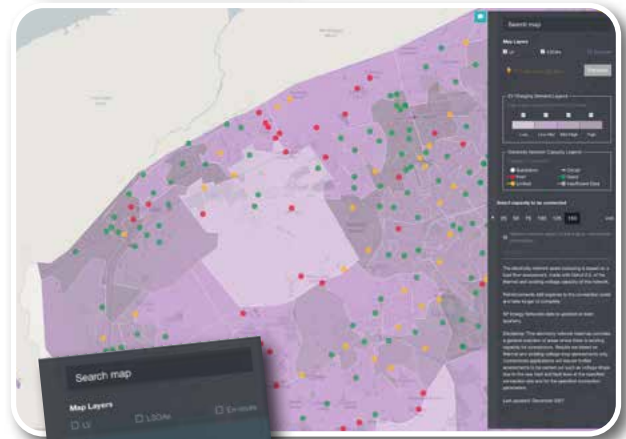


To view the Transport Model Report [click here](#)

**The Charge Transport Model** – the first of its kind in the UK – provides scenario-based forecasts to help anticipate EV charging demand and public infrastructure requirements by location. Its purpose is to help inform decision-making by stakeholders such as local authorities or CPOs regarding the deployment of chargepoints needed in different areas to meet future demand.

The Charge Transport Model works by providing a digital representation of transport patterns based on where and how far vehicles are driven, and where they are parked. It enables a number of usage scenarios to be run showing how different factors over time might affect public EV charging demand.

## ConnectMore



The Charge Transport Model has already produced some fascinating results in the Charge Project's Manweb region, delivering rapid insights that have only been made possible by this specific combination of transport patterns with network capacity data.

A recent online event showcasing the Charge Transport Model, including case studies demonstrating how the model can be used to assess chargepoint demand, was attended by over 100 stakeholders. The slides from the event are available to view [here](#).



## A blueprint for DNOs

A core objective of the Charge Project is to help electricity distribution network operators (DNOs) optimise the connection of the UK's charging infrastructure, maximising existing electricity network assets while identifying where additional capacity may be needed.

As such, the Charge Transport Model is intended as a blueprint for DNOs around the UK to adapt and use, in order to both accelerate public chargepoint installation and ensure that it happens in the right locations.

By using a transport model to help understand the future demand on their network, DNOs can make effective plans to maximise existing capacity, identify flexible service opportunities, and where necessary, plan for reinforcement works.



**Geoff Murphy, Charge Project Lead, comments:**



*"DNOs will increasingly come under pressure to accommodate more public charging infrastructure as the number of EVs on our roads continues to grow. The development of regional transport models is an important way for DNOs to get ahead of the game now, by guiding chargepoint roll-out in a way that maximises existing network infrastructure and avoids unnecessary upgrades."*



**Network operator SP Energy Networks (SPEN) has put out a call for flexibility, with a tender for 1.4GW of services across areas in SP Manweb and SP Distribution.**



## DfT charging stats reveal north/south divide

The Department for Transport has released its latest electric vehicle charging device statistics, which shows that, while more public chargepoints are being installed in the UK, the distribution of them is still unevenly spread, with a north/south divide clearly evident.

An additional 7,600 public chargepoint installations have been added to the country's network in the 12 months since January 2021, representing a 37% increase. This brings the total number of public chargepoints available to 28,375.

However, the data shows that London is still a long way ahead of other regions in terms of public chargepoints, with 102 devices available per 100,000 people, while areas such as the north-west have just 24 per 100,000 people.

In its report, the DfT notes the uneven geographical distribution of chargepoints in the UK, and comments, "Some UK local authorities have bid for UK Government funding for charging devices, and others have not. Most of the provision of this infrastructure has been market-led, with individual charging networks and other businesses choosing where to install devices."

## Regional distribution of charging devices\*

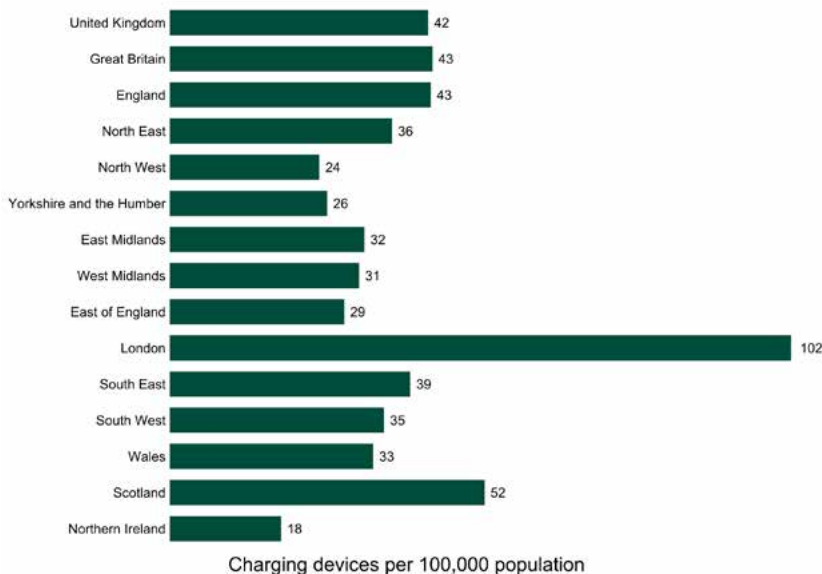


Chart 1: Public charging devices per 100,000 of population by UK country and region: 1 January 2022

\* Source: UK.Gov website. **Official Statistics**  
Electric vehicle charging device statistics: January 2022  
Published 20 January 2022

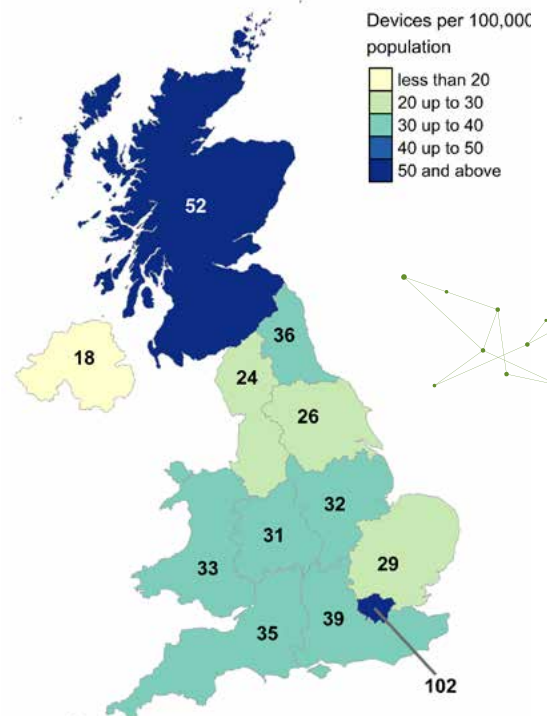
### Geoff Murphy, Charge Project Lead, comments:



*"While there's clearly a greater concentration of electric vehicles in London, that doesn't completely account for why this picture is so skewed.*

*Local authorities in the north may be focusing their budgets on what they view as more pressing infrastructure concerns, but EV demand is rising everywhere. And as the DfT points out, grants specifically for the installation of charging infrastructure are available.*

*"Initiatives like the Charge Project's ConnectMore interactive map have been developed to help stakeholders such as local authorities understand where charging demand is going to be greatest in their region, and to plan accordingly, so that budget spend on chargepoints is always as precisely targeted as possible."*



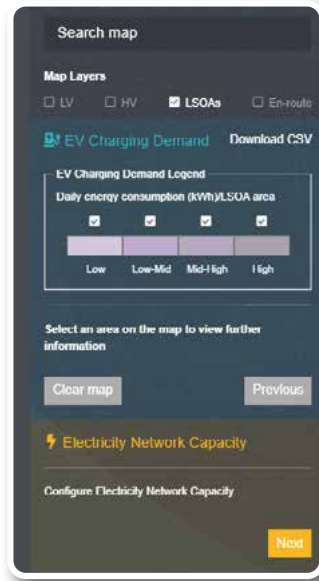
Map 1: Total and rapid public charging devices per 100,000 of population by UK region 1 January 2022



## ConnectMore now includes En-route feature and GUI enhancements

The **ConnectMore** interactive map has recently added additional functionality and made its graphical user interface (GUI) even easier to use.

The new En-route feature enables users to predict the total number of EVs requiring en route charging somewhere during their journey. Data is available for designated carriageways, including short stretches of motorway and A and B class roads. Forecasts for the number of vehicles and energy demand for en route charging are available on four different scenarios generated by the Charge Transport Model.



En-route results can be used to indicate the potential demand for an en route charging site close to the road network, with figures provided to show the total number of EVs estimated to use a particular road within a day and the number of EVs that have a requirement to charge during their journey.

In addition to this new feature, the ConnectMore GUI has been improved, with a changed colour scheme for the EV charging demand heatmap, which is more complementary to the other map layers that can be added.

The tick boxes for the map layers are now more conveniently sited under the search box on the right-hand side, and there are now also tick boxes above the

EV charging demand heatmap legend, enabling the user to choose which energy consumption areas are displayed. Similarly, users can view the road network according to charging demand in the En-route feature, so that, for instance, only those sections of road with high demand are displayed.



The tick boxes for the map layers are now more conveniently sited under the search box on the right-hand side, and there are now also tick boxes above the EV charging demand heatmap legend.



### Have your say:

The Charge Project is very keen to gather feedback on ConnectMore's functionality and the value it delivers to users. Anyone can try out **ConnectMore**, with "use it and comment" prompts included throughout. Alternatively, users can email feedback and comments to the Charge Project at [chargeproject@spenergynetworks.co.uk](mailto:chargeproject@spenergynetworks.co.uk).

# Q&A

## Meet the team



**David Aspital,**  
**Transport Planner**

### How did you become involved with the Charge Project?

I started working at PTV in January 2020 as a demand modelling specialist to work on the Charge Project, having worked on similar large-scale transport models in my previous role.

### What does your day-to-day work life involve? (A bit about your role, plus where do you work, whom do you speak to/meet, time for lunch, etc.?)

A typical day working on the Charge Project would involve a lot of data processing, updating the Transport Model code or inputs, and analysis of the outputs. Now that the work on the Transport Model has been finalised, I am working on a variety of other projects, including the development of a tool to quickly analyse the capacity of rail stations under a number of scenarios and a national rail passenger model to better understand how the rail network is used. I am still mostly working from home, but going into our London office once a week to meet with colleagues and clients.



### What's the best thing about your job?

The highlight of my job is the ability to push the boundaries and apply new and innovative modelling techniques such as those that were developed for the Charge Project. It's very fulfilling when the real-world effects of this modelling can be seen after the project has been completed.

### What do you do outside of work? (Family, hobbies, interests, teams supported, pets, etc.)

Most of my time outside of work in the past 6 months has gone into planning my wedding, which was at the end of last month. Since then, we have enjoyed having free time again, and have been catching up on all the Netflix shows that we missed. I am also a keen runner, and in 2021 completed my target of running 1,000 miles in a year.



### What's the biggest challenge that the UK faces in its drive to net zero by 2050?

I believe that not only is it important that we make the switch from ICE to zero-emission vehicles, but we also promote the role that alternatives, including active modes, should play in reducing emissions. I also think it's vital that reducing emissions from commercial transport, such as logistics and delivery vehicles, is considered seriously, as there's opportunity to bring about this change faster and in a more efficient manner than with private vehicles.

### What was your first car and what do you drive now? (Model, colour, year, what happened to it, etc.)



Speaking as someone who still has a green driving license, I'm yet to own my first car, and instead rely on buses and trains for the time being. I started learning to drive in 2020, but the various lockdowns

prevented me from being able to take my test. Unfortunately, there is now a very large backlog for tests, so it is difficult to book a slot, even months in advance!



## Smart charging connections – we still want to know your thoughts!

At the end of last year, the Charge Project published its **Public Chargepoint Flexibility Insight Report**, which reflected on what the team had learnt so far about Smart Charging Connections (SCCs) following a series of trials and engagements with OEMs, CPOs, chargepoint installers and owners, and local authorities.

We'd still love to hear your views on this report and the potential applications of SCCs – where they might be most beneficial to public charging infrastructure, and what deployment issues they may face.



The report looks at ways in which costly and time-consuming electricity network reinforcements required to accommodate new chargepoint infrastructure can, in many cases, be avoided through the use of SCCs, offering a quick and cost-effective alternative to reinforcement work. It also examines the different types of SCC schemes and how they could best work alongside other connection options to effectively boost capacity on the network.

The development and introduction of SCCs can't be done by DNOs alone, and so a key aim of the report is to gather feedback from stakeholders on the insights that the Charge Project has captured so far.

### Have your say:

To comment on the insights included in this report, plus the opportunities and challenges for SCCs, read the report [here](#), and then leave feedback [here](#). Alternatively, you can email feedback and comments to the Charge Project at [chargeproject@spenergynetworks.co.uk](mailto:chargeproject@spenergynetworks.co.uk).

## Charging in the news

### i news

#### Electric car owners face 'postcode lottery'

26 January 2022

Only 21 councils across England and Wales allow motorists to top up their batteries for free, according to data obtained by British Gas, as electric car owners report being hit with steep charges.

Drivers based outside of the identified free areas are charged up to £4 per kilowatt hour (kWh). To charge a typical electric vehicle (EV) from flat to full at that rate would cost £240, according to British Gas. It would cost around £3.90 to fully charge the same car at home using a dedicated off-peak EV tariff. EV drivers without a driveway or off-street parking often rely on public charging points.

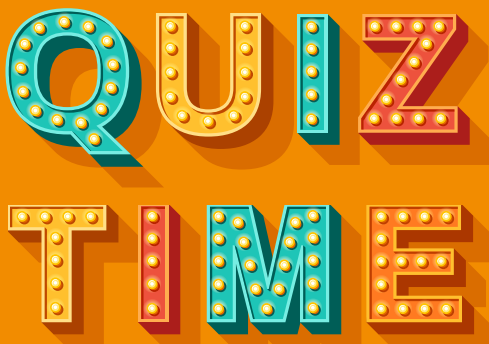
### The Guardian

#### Electric car charging points 'spread too unequally across UK'

16 February 2022

The UK car industry has warned of a "growing regional divide" in the provision of electric car chargers, as it called for a new regulator to oversee legally binding targets for charger installation.

The number of publicly available chargers has not grown fast enough to keep up with the soaring number of battery-powered electric cars on British roads, according to the Society of Motor Manufacturers and Traders (SMMT), a lobby group. Public charger numbers rose by 82% between 2019 and 2021, but this pales in comparison with the 600% jump in the number of electric cars during the same period.



### According to SMMT, OLEV and DfT Statistics:

How many pure electric vehicles are currently registered in the UK?

- a) 398,431
- b) 421,347
- c) 453,102

What proportion of all new vehicles registered in the UK in 2021 were pure EVs?

- a) 8.4%
- b) 9.5%
- c) 11.6%

Answers: 421,347 and 11.6%