

## 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, that aims to accelerate the UK's transition to electrified transport.

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

Running for four years throughout Merseyside, Cheshire, North Shropshire, and North & Mid Wales, the Charge Project will – for the first time – merge transport and electricity network planning.

It will create a comprehensive map of the region to identify where EV chargepoints are needed and can be best accommodated by the electricity network. It will also pioneer smart connection agreements to boost chargepoint installation.

## Smart connections trial

One of the innovative tools at the heart of the Charge Project is 'smart charging connections' for EV chargepoints.

Two of the big challenges facing the UK in its drive to become an EV-friendly nation are installing enough chargepoints and ensuring that the electricity network is able to accommodate them. Smart charging connections address both of these challenges.

A smart charging connection can automatically reduce chargepoint capacity during periods of peak demand, which ensures that the electricity network is never overloaded. This also means more chargepoints can be installed in single locations without the need for expensive network reinforcements.

To understand how smart charging connections work in the real world, SP Energy Networks is currently conducting a major trial of the technology across the Charge Project region. We're reaching out to local businesses, developers and chargepoint operators who are already considering the installation of chargepoints, and asking them to participate in the trial. To get involved, go to [www.spenergynetworks.co.uk/pages/charge\\_expression\\_of\\_interest\\_form.aspx#](https://www.spenergynetworks.co.uk/pages/charge_expression_of_interest_form.aspx#).

## What's in it for them?

Firstly, because smart charging connections intelligently control chargepoint power consumption, organisations will be able to install more chargepoints at their sites than with standard connections – plus they might be able to install chargepoints where it wasn't economically or physically possible before.

Secondly, they'll potentially be able to offer consumers faster or cheaper charging outside periods of peak demand.

The results from this trial will give us vital insight into how smart charging connections work in the real world. We can then fine-tune the technology before deploying it more widely.

Geoff Murphy, lead for the Charge Project at SP Energy Networks, says: 'The development of a comprehensive EV charging infrastructure will be a key part of the "green recovery" post-COVID-19. But we also need to safely and effectively manage the demand on the electricity network that increased EV charging will create. We believe smart charging connections could be the perfect solution to boosting chargepoint installation, while ensuring the smooth running of the network.'

[https://www.spenergynetworks.co.uk/news/pages/vehicle\\_charging\\_trial.aspx](https://www.spenergynetworks.co.uk/news/pages/vehicle_charging_trial.aspx)

Look out for regular updates on how the trial is progressing in future issues of CHARGEPOINT



**Get ready for the electric vehicle opportunity**

With the sale of new petrol- and diesel-powered vehicles banned from 2035 in the UK, the majority of traffic on our roads will soon be electric.

To make sure we're ready for this change, SP Energy Networks' Charge Project is doing investment in electric vehicle (EV) smart charging connections across Merseyside, Cheshire, North Shropshire and North & Mid Wales.

If you provide charging, whether at a workplace, retail or leisure destination, outside area or shared residential or on-street area, we'd like to propose why you are a major trial to unlock your site's hidden charging potential.

**Why join?**

There has never been a better time to invest in EV infrastructure:

- Government incentivising drivers to switch to EV
- Increased environmental or quality awareness and changing EV adoption
- Opportunity to increase footfall and/or generate local environmental

The trial is open to existing chargepoint operators, or to the home installing the installation of chargepoints during 2020 and the first half of 2021.

**Other advantages of joining the trial**

- To trial an exciting smart charging connection. There are other benefits to having a smart per-hour
- Free technical advice on the current state of the network and the need for the network connection
- Proven plans to help operators in the trial
- Early access to project learning

**Get involved**

If you're interested in getting a smart charging connection and free trial, you might be eligible. Please contact us at: [ChargeProject@spenergynetworks.co.uk](mailto:ChargeProject@spenergynetworks.co.uk)

**What is a smart charging connection?**

The Charge Project is pioneering intelligent technology that automatically controls the power consumption of chargepoints. A smart charging connection:

- Means you can build more chargepoints
- Enables chargepoints to make connections to new resources
- Lets you offer a more flexible charging service to consumers

**Charge Project Timeline SITE TRIALS**

Your site would need to be operational over this period:

- June 2020
- June 2021

SP ENERGY NETWORKS



## Transport model will drive EV investment

In July, the Charge Project unveiled an innovative transport model designed to predict where and when EV charging demand would occur. The model can help investors identify the best locations to install chargepoints, and also pinpoint where the demand needs to be accommodated in the electricity network.

The transport model anticipates EV uptake based on demographics, land-use data, travel patterns, driver behaviour and scenario-based assumptions of how the market will evolve in the coming years. This insight means infrastructure investment can be targeted where it's most needed and deliver maximum benefits for current and future EV drivers.

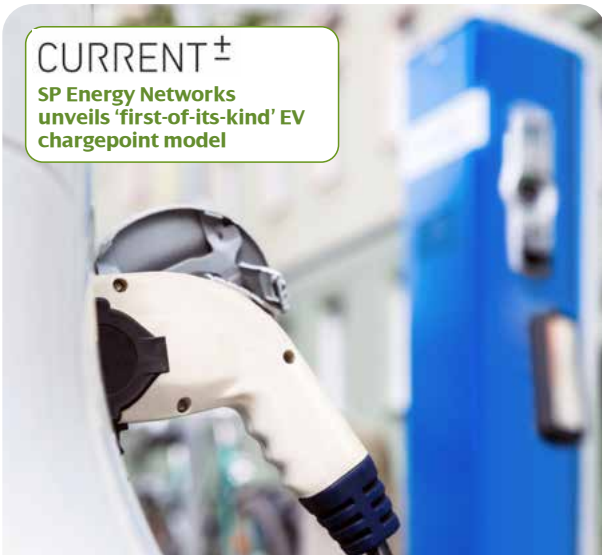
Scott Mathieson, Network Planning and Regulation Director at SP Energy Networks, says:



*'This is a never-before-available online platform that can generate detailed scenarios for EV uptake as far into the future as 2050. By predicting where charging demand is likely to be high, the model can help drive infrastructure investment and development, making the transition to EVs viable for more people.'*

### CURRENT<sup>±</sup>

SP Energy Networks unveils 'first-of-its-kind' EV chargepoint model



## LCV Charging up at Cenex-LCV

Members of the Charge Project team – Geoff Murphy at SP Energy Networks, Elaine Meskhi at EA Technology, and Laurence Chittock at PTV Group – recently presented at Cenex-LCV, the UK's premier low carbon vehicle event (18–19 November).

Speaking to an audience of key stakeholders, the team gave an overview of the smart charging connections trial and transport model announcement, as well as previewing the next chapter in the Charge Project story: ConnectMore.

ConnectMore will be a free-to-access online tool designed to help businesses and local authorities identify suitable sites for new chargepoints and estimate the cost of connecting them to the network.

Two core elements in particular were discussed:

- ConnectMore Heatmaps will host information from the transport model, as well as show EV charging demand and network capacity in four scenarios and five-year periods to 2050
- ConnectMore Connection Cost Estimator will use up-to-date information about network capacity to instantly calculate a budget for the connection.

The ConnectMore user interface is currently being designed, and the team asked the audience for feedback regarding optimal layout and features.

**A trial version of ConnectMore will be available in December 2021, with the tool fully launched 12 months later in December 2022.**

# Q&A

## Meet the team



**Geoff Murphy,**  
**Project Lead, SP Energy Networks**

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

I've been working on network innovation projects for several years and relished the opportunity to lead this project, as it's an area I'm passionate about as an EV driver.

### What does your day-to-day work life involve?

It's my responsibility to ensure the successful delivery of the project for SP Energy Networks and our customers, so my working week revolves around ensuring the project team and our partners have the necessary support, engagement, input and feedback to progress their elements of the project successfully. This involves regular Teams calls with each partner, as well as key internal and external stakeholders.

Like most people, my day-to-day working life has changed drastically over the last eight months, as I have had to adjust to working from home. I typically build my day around walking my children to and from school – this discipline ensures I get some fresh air and exercise, and upon my return, I have fresh impetus to complete tasks or pursue new ideas.

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

I genuinely believe we're doing something worthwhile that will play its part in the UK's transition to EVs. It feels like we're at the start of something big, and across the industry there's a strong sense of collaboration, as no single party can do this alone. Our interactions with stakeholders only reinforce this belief and make for an enjoyable work environment.

### What do you do outside of work?

My life is centred round my family – two girls (5 and 4) and a son who was born six weeks before lockdown. When I have any scarce free time to myself, I'm keen to flex my culinary skills (particularly barbecuing) and watch the Premier League Champions, although my season ticket is gathering dust at present, unfortunately.



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

While the decarbonisation of transport is a major challenge, I believe the decarbonisation of heat is a significantly bigger barrier to net zero by 2050. Unlike transport, for which we have a clear route forward through the adoption of EVs, there is no clear solution for heat. All the frontrunning solutions have major drawbacks and technical/economic challenges that need to be overcome before they can be considered viable at scale. In most cases, the adoption of low carbon heating will cause major disruption to homes, be it through installation of heat-pump systems and new heat emitters or a mandated change of appliances should clean hydrogen prevail. As such, there's currently little enthusiasm for low carbon heating unless it's a new-build property.

By comparison, the desirability of EVs will increase as more models enter the market and prices drop, and range anxiety will diminish as battery technology improves and public chargepoints become more prevalent.

SP Energy Networks is acutely aware of the challenges associated with the decarbonisation of heat and transport and their potential interaction. Both are a major focus of our innovation projects and strategic plans for ED2 and beyond.

### What was your first car, and what do you drive now?



A 1990 'G Reg' white Ford Escort when I was 17 – it was my pride and joy until I headed to university and needed something a bit more reliable.

Until recently, we were a two-car household, which included a Nissan Leaf EV. However, with our travelling significantly diminished for the time being, we've dropped down to one car, and unfortunately, we've had to keep our dirty diesel, as it's the more practical for a family of five. I'm watching weekly the announcements of new EV models with great interest to see if a large enough EV becomes available in early 2021. I have gone fully EV; new ICE vehicles hold no interest for me anymore.



# Q&A

## Meet the team



**Esther Dudek,**  
**Senior Consultant,**  
**EA Technology**

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

I started working on the Charge Project in January 2020. I'm part of the EV Infrastructure team at EA Technology, and we're delivering the ConnectMore online tool. I joined the team to focus on the interface between PTV's transport model and how we use and represent the data from the model in ConnectMore. I've worked on EV projects since 2016, but this is my first looking at public charging infrastructure.

### What does your day-to-day work life involve?

My role in projects is often about how we analyse and interpret data, and then how we communicate what that's telling us. In the last few months, I've been learning to use GIS software. We're doing meetings via Teams with future users of ConnectMore to understand how they want to use the data. It's giving us a great understanding of how best to develop the tool so it meets their needs when ConnectMore is launched later in the project.

I've been working at home since March. The tools we've got to run video meetings and screen-sharing sessions have meant I haven't found it too disruptive. It's also made events more accessible for me – I've had the opportunity to present at events I wouldn't have been able to travel to in person.

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

I'm glad to be working in an area where it feels like we're making a real, positive difference to society by enabling EV uptake. The projects I've worked on in the last few years have already made a difference, such as supporting the mandating of smart charging for domestic EV charging, and the Charge Project will make a big difference to stakeholders planning charging infrastructure in the Manweb area.

I'm lucky to work with a really great team of people at EA Technology. I'm learning a lot from working with our software team. There's always someone who's happy to help answer questions, and we look out for each other.

### What do you do outside of work?



I've been crocheting my way through lockdown and enjoying being able to do something creative. I'm part of Ukulele Club Liverpool, and we've just started online lessons again. It's good to see everyone again and learn some new songs. I also volunteer with a charity called Diversity Role Models, which runs workshops in schools to prevent homophobic and transphobic bullying. They're beginning to roll out virtual sessions, so I'm hoping to get into a school again soon.

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

Meeting the net-zero goal is a huge challenge and will mean big changes across many parts of our lives and society. There's a challenge in how we communicate that change and engage people to make and support those changes. It's a great time to be working in engineering – there's certainly no shortage of interesting things for an engineer to get stuck into for the next few decades!

### What was your first car and what do you drive now?

My first car was a seven-year-old green Ford Ka, bought at somewhat short notice when I switched from living in university halls back to commuting from my parents'. I ran it until it was going to cost more to fix the rust than the car was worth.



At the moment, I drive a little Hyundai i10, although it's not getting much use at the moment. I think I've bought petrol twice since March. I expect this will be my last petrol car – I'd love an electric Mini if they increase the range!



## Breaking news: Government announces major EV investment

The government made an announcement on 18 November that gave added impetus to the UK's EV charging infrastructure roll-out, and emphasised the importance of initiatives such as the Charge Project.

As part of his pledge to kickstart a 'green industrial revolution', Prime Minister Boris Johnson said that new cars and vans powered wholly by petrol and diesel would not be sold in the UK from 2030. This is a significant advance on the government's previous commitment to phase out such sales by 2035, and a major boost for EVs.

In support of this announcement, the government has allocated £4bn of investment in green technologies, with £1.3bn of this money earmarked for EV chargepoints. There will also be £582m available as grants for vehicle buyers to help make the transition to electric.

### Geoff Murphy welcomed the announcement:

'With the sale of new petrol- and diesel-fuelled vehicles now banned in the UK from 2030, there's going to be a dramatic upswing in the number of EVs on our roads in the next few years.

'How do we encourage local councils, property developers and businesses to install enough public chargepoints to make powering EVs as easy and convenient as possible, especially for those drivers without private garages or driveways? And just as importantly, how do we ensure that the electricity network is able to safely and effectively deal with this new surge in demand?

'These are exactly the issues that the Charge Project is addressing and developing solutions for.'

### The Guardian also recently ran the following story:

'Uber has pledged to invest more than £5m in public electric vehicle charging infrastructure in some of the poorest boroughs in London, to help persuade its reluctant drivers to switch to electric cars.

'According to Uber's analysis, the concentration of chargers is far higher in affluent boroughs, such as Kensington and Westminster, than in the areas where its drivers more typically live. Drivers in boroughs such as Newham and Tower Hamlets are also less likely than residents of south-west London to live in houses with driveways that allow them to charge electric vehicles overnight.'

(The Guardian, 19 October 2020)

## Getting ready for ENI

### Energy Networks Innovation Conference

#### Energy Networks Innovation Conference 8–9 December 2020

Charge Project team members will be speaking soon at another major online event. Formerly known as the Low Carbon Networks & Innovation Conference (LCNI), but this year rebranded, the Energy Networks Innovation Conference is the go-to conference for network innovation and the UK's flagship knowledge dissemination event for electricity and gas energy network operators.

Managed by the Energy Networks Association, the conference offers a single platform on which delegates can access the major learnings from the largest regulator-funded innovation projects in the country: the Network Innovation Competitions (NICs) and Network Innovation Allowance (NIA).

Click here for more information about ENIC.

<https://www.energynetworks.org/events/energy-networks-innovation-conference>

## QUIZ TIME

According to Zap Map, how many locations in the UK currently have public chargepoints?

- a) 11,407    b) 12,554    c) 13,981

What percentage of these chargepoints are located in the North West and Wales?

- a) 8.9%    b) 9.6%    c) 10.7%

Answers are 12,554 & 10.7%