

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.



The **ConnectMore Interactive Map** was unveiled to the public for the first time at the 14th Cenex-LCV2021 conference and exhibition, the UK's premier event for the low carbon vehicle community.

The reaction to ConnectMore – which, for the first time, brings together predicted future charging demand and electricity network capacity planning – was overwhelmingly positive from both attendees at the event and the media.

Coverage of the launch was featured in all key publications. EV FleetWorld's headline was typical of how the story was received: "Free online tool could be game changer for public chargepoint installation".

Charge Project Lead Geoff Murphy spoke to Frank Millard at Traffic Technology International, talking in depth about the benefits of ConnectMore:

"It allows installers to readily identify where there is capacity available on the network in a matter of minutes – the alternative requires formal correspondence with the DNO, which can take several days to provide the same insight. They can then prioritise locations where a connection to existing network assets is plausible, which will enable them to accelerate their deployment programmes considerably.



The **ConnectMore Interactive Map** can help identify the optimum locations for EV chargepoint installation and inform roll-out strategy



"ConnectMore also includes a transport model that predicts EV charging demand according to different EV uptake and chargepoint deployment scenarios out to 2050, so chargepoint installers can easily identify 'hotspots' and understand the scale of the requirement to meet anticipated demand."

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 here](#), with feedback prompts provided throughout. Alternatively, users can email feedback and comments to the Charge Project at chargeproject@spenergynetworks.co.uk

Public chargepoint roll-out to become law?

The Government has announced that chargepoints are to be installed at every new home and office in England by 2022. The aim is for the legislation, the first of its kind in the world, to be expedited through parliament to speed up the roll-out of chargepoints across the country.

Geoff Murphy, Charge Project Lead, commented: "This is good to hear, because at the moment it's at the discretion of the local authorities, rather than a requirement by law. To really be effective, the legislation needs to mandate the power rating as well. We've seen some housing developers installing external 13A wall sockets, which aren't suitable for EVs. Ideally, we want all new builds to be equipped with 7kW (32A) chargepoints."

At the same time, the Government's Office for Zero Emission Vehicles issued an open consultation, its **Future Of Transport Regulatory Review**, which looked at "areas of transport regulation that are outdated, a barrier to innovation or not designed with new technologies and business models in mind." Proposals under review included making it a statutory duty for local authorities to plan for and potentially provide EV infrastructure, and requiring chargepoints to be installed in all non-residential car parks.

Jacob Roberts, Transport Policy Manager at REA – the Association for Renewable Energy and Clean Technology – told the Charge Project team:



"When you first presented what ConnectMore would do two years ago, I thought that it was very ambitious, but you have delivered pretty much everything you promised. If I have one disappointment today, it's that it only covers the North-West – it needs to cover the whole country!"

"The Government is currently running its Future Of Transport Regulatory Review consultation, which includes questions on enabling local authorities to plan local EV charging infrastructure networks. I intend to use ConnectMore as an example of exactly the kind of thing local authorities should be equipped with."





A recent Freedom of Information request by the electrotechnical and engineering services body ECA found that two thirds of local authorities in the UK have no plans for installing public chargepoints. Over half said they were prohibitively expensive to install and over a third said constraints such as a lack of energy network capacity were also preventing chargepoint deployment.

Geoff Murphy, Charge Project Lead, added:



“These statistics underline why the work and research that the Charge Project is carrying out is so important. ConnectMore and Smart

Charging Connections are designed to make public chargepoint installation both easier and more affordable, while ensuring that the electricity network has the capacity to meet demand.”

Gaining insight on Smart Charging Connections

Following a series of engagements with OEMs, CPOs, chargepoint installers and owners, and local authorities on the subject of Smart Charging Connections (SCCs), the Charge Project has produced a Public Chargepoint Flexibility Insight Report that reflects on what the team has learnt so far and assesses where SCCs are likely to fit in the EV charging ecosystem.

This engagement process has provided a wealth of insight into the technical, commercial and social challenges, risks and opportunities relating to SCCs,

plus their broader adoption and how they sit alongside the market-driven provision and procurement of flexibility services.

As well as disseminating this insight, the purpose of this report is to examine the four different types of SCC scheme – Timed Capacity Connections, Customer Load Management Schemes, and Locally and Centrally Managed Constraint Schemes – and how they could work alongside other connection options.

It’s clear that the development and introduction of SCCs cannot 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. All relevant parties are invited to share their views on the potential applications of SCCs, where they might be most beneficial to the public charging infrastructure, and what deployment issues they may face.



Have your say:
The Charge Project is very keen to get feedback on the opportunities and challenges for SCCs, and on the insights already included in this report. The report can be viewed [here](#), and feedback can be left [here](#). Alternatively, users can email feedback and comments to the Charge Project at chargeproject@spenergy.co.uk



Q&A

Meet the team



Sarah Buckley,
Project Engineer,
SP Energy Networks

How did you become involved with the Charge Project?

I decided to gain my Renewable Energy degree after having my two children. During my studies, I was accepted onto SP Energy Networks' scholarship programme and completed my graduate training in 2019. Having a strong interest in low carbon technologies (LCTs), I jumped at the opportunity to work on the Charge Project, which I've done since its commencement in 2019.

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

From the start of the project, I've been tasked with delivering the smart charging trials with our partner, Smarter Grid Solutions (SGS). The trials are aimed at investigating innovative solutions that accelerate the roll-out of EV charging infrastructure, while minimising disruption by reducing the need for network reinforcement. This has involved working with a range of stakeholders to find suitable trial sites and support SGS in the design of the Smart Charging Connections. I am also responsible for raising awareness of these solutions and supporting the transition to business-as-usual once the trials are complete.

Currently I'm still working from home, and have been for the last 18 months. I've embraced the use of technology to conduct meetings and stay in touch with colleagues. I do enjoy the flexibility it brings, which

allows me to do the school runs and become a dog owner – something I would have had difficulty doing in the past.

What's the best thing about your job?

COP26 and the publication of the Government's path to net zero have placed more emphasis on EVs than ever. The best thing about working on Charge is the opportunity to make a difference in how EV chargepoints are connected to the network – more quickly and



efficiently than conventional connections. If we want people to make the transition to EVs, there needs to be adequate access to charging infrastructure, particularly for those unable to charge at home.

What do you do outside of work?

I have a very busy household with three children and two dogs. In between doing mum duties, I enjoy walking the dogs with my partner and running as often as I can. Last month, I completed a 50-mile running challenge to raise money for **Maggie's** – a charity providing free cancer support – which encouraged me to run a few miles a day. My aim is to sign up for a 10km run soon and build up to a half marathon.

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

We are in unprecedented times. The UK and the rest of the world need to act now and take large steps towards net zero rather than small ones. As a Distribution Network Operator, we need to support the uptake of LCTs and, in particular, the electrification of transport and heat. The main challenge is making this transition within the existing housing stock – much of our electricity network wasn't designed to support this additional load, and the efficiency of our homes needs to dramatically improve before we can move away from gas or oil. As we are exploring with Charge, we need to embrace smart technologies that help us use electricity more efficiently and enable the connection of



LCTs, which may not be possible via conventional methods.

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

As I grew up in Australia, I drove a white Holden Commodore before moving to the UK. For nearly two years I have owned a second-hand Nissan Leaf. It's an ideal car for short journeys and I especially love the heated seats and steering wheel! Now that I own an EV, I wouldn't go back to a traditional petrol or diesel car – I don't miss going to the petrol station and the Nissan Leaf lets you grow a tree per journey depending on how well you drive!



Q&A

Meet the team



Calum Watkins,
Smart Grid Consultant,
Smarter Grid Solutions

How did you become involved with the Charge Project?

I joined Smarter Grid Solutions (SGS) in June 2020 as a Class of COVID graduate from the University of Strathclyde, and currently split my time between the Integration and Consulting & Analysis Practices. Joining the Charge Project has been great in allowing me to bring experience from these two teams together, as SGS is involved in both the design and delivery phases.

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

Each day comes with new surprises and challenges, particularly with remote working being the norm. My office is the spare room of our flat, though I recently had to give it up for guests staying during COP26. My work spans a variety of tasks including documentation writing, research, delivery of engineering services, customer discussions, hardware and software testing, and business development. I often nip out for lunch to the great variety of local cafes in my neighbourhood, play some table tennis or head up to the park for a run.

What's the best thing about your job?

The people I work with are great and there are lots of laughs – despite working almost entirely from home since I started, I've felt very much part of the team. The projects are very varied, and every day is a school day with opportunities to learn from the best people in the industry!

What do you do outside of work?

I'm a keen hockey player and our team, Stepps HC, is currently sitting mid-table in the Scottish National League. I'm also an active member of the local Christian community and we're looking to open a community grocery over the next year with the support of a local boxing club. My wife and I are also keen cyclists – by which I mean we like to cycle to coffee and cake places! We're also currently experimenting with hydroponically grown avocados!



Another passion of mine is being a director for Glasgow Community Energy, which is a volunteer-run organisation whose vision is to empower vulnerable communities by developing innovative, locally owned community energy projects across the city. Revenue from the energy generated by the projects is reinvested back into providing support for other local projects and groups.

Our cooperative model means that anyone in the city can invest and become a member with equal voting rights. You can find us at www.glasgowenergy.coop

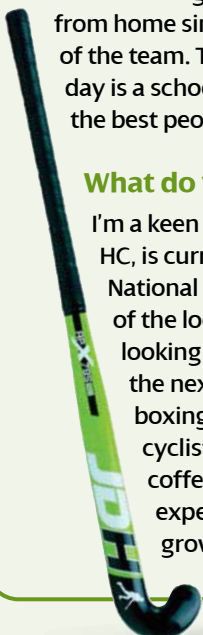
What's the biggest challenge that the UK faces in its drive to net zero by 2050?

I hope that we'll see a real shift in society moving to sustainable energy options. It's cool seeing this happening in our projects, but these are often still very much at the demonstration stage and have yet to be realised at scale. When people start seeing the opportunity for smart local energy systems, we'll be onto a winner. Electrifying transport is a major part of these smart systems in reducing emissions globally, so we need to get it right and show the value that can be created for customers.

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



My first and only car has been a nippy, white Renault Clio called Harry, who gets out and about transporting hockey players and foodbank deliveries each week!





Understanding the transport model

An online stakeholder event is being held on 26 January 2022, 11:00-12:30, entitled "Charge: What Mobility Patterns Tell Us About the Requirement for Public EV Charging Infrastructure".

The event is being held by PTV Group, the Charge Project partner that developed the detailed transport model covering the Manweb licence area that underpins ConnectMore.

The model was built using PTV Group's Visum software, which is used by many of the UK's local authorities, plus the Department for Transport and the European Commission. The model uses a range of data to understand where and how far cars are driven, and where they are parked – including information about residential driveways – and combines this with a number of usage scenarios.



The session will explain how the model was developed and how it can help to quantify requirements for public charging infrastructure based on mobility patterns. Case studies will be presented on how the tool can be used to assess chargepoint demand at a local level.

[Sign up for this event here.](#)

Charging in the news

Evening Standard.

[Grant Shapps reveals new design for electric car chargepoints](#)

10 November 2021

A new design to make electric vehicle (EV) chargepoints "instantly recognisable" has been revealed at COP26. Transport Secretary Grant Shapps said "it could become as iconic as the Great British postbox or black cab".

Consultancy firm PA Consulting, which created the design in partnership with the Royal College of Art, said it has "an instantly recognisable circular handle", while its materials, size and black colour "help it to blend into the UK's diverse surroundings, whilst remaining visible for EV drivers".

QUIZ TIME

According to the Office for National Statistics:

What percentage of 16- to 29-year-old vehicle owners said they were likely to switch to an EV within the next ten years?

a) 52%

b) 64%

c) 70%

Of the 32.7 million licensed cars in the UK, what percentage run on petrol or diesel?

a) 88%

b) 93%

c) 97%

Answers are 52% and 97%



[Electric car charging – do you know where your nearest public point is?](#)

17 November 2021

Nearly half of drivers considering an electric vehicle as their next car purchase say they don't know where the closest public chargepoint is, suggesting most buyers are those in a position to boost batteries almost exclusively at home.

With a third of households not having off-street parking and therefore reliant on public charging infrastructure, the study hints at yet another example of expensive electric cars predominantly being bought by the wealthy.



To view the Flexibility Insight report [click here](#)