SP Energy Networks
Newsletter November 2019

CHARGE – Refuelling Tomorrow's Electrified Transport

Charge will enable stakeholders across the SP Energy Networks SP Manweb licence area to identify where critical EV charging infrastructure can be located to encourage and maximise usage, minimise the cost and disruption of connections, speeding up the Net Zero transition.

Project Overview

Charge will accelerate the deployment of public charging infrastructure by bringing together expertise from transport planning, the electricity network and charging solutions. The project will provide insight into where electric vehicle charge points may be required, and how their use will impact the electricity network.

Whilst is it expected that the majority of EV charging will take place at home and in the work place, there will still be a need for on-street and public charge points. The charge points may be required by those who do not have a driveway – e.g. those who live in flats, apartment or terraced houses. Charging facilities are likely to also be required at public destinations such as leisure and shopping centres, tourist attractions, or filling station forecourts. The project will allow a better understanding of the network impact of different types of charge point, taking into account locations, the hardware installed, use patterns and whether flexible connection arrangements can be used.

Charge also aims to reduce the length of time that it takes to bring new large-scale charge point schemes to fruition.

Objectives

The objective of Charge is singular, to accelerate the connection of EV charging infrastructure across the SP Manweb licence area. It looks to do this by:

- Combining Transport Planning and Network Planning to maximise available network capacity
- Developing and trialling innovative connection solutions for destination and en-route charging
- Developing a connections tool to support mass deployment of EV chargers

Summary

The project comprises of three separate work streams that come together to provide connection customers and investors in EV infrastructure with a user-friendly online tool to facilitate the deployment of chargers. The '**ConnectMore**' tool will provide customers with access to information on the likely requirement for chargers at any given location, the type of charger(s) required, the available network capacity, connection options based on Smart Charging Solutions (SCSs) and an indicative cost for all the connection options.

The provision of this information will be done in real time over a wide range of platforms common to the customers. The main aim being that ConnectMore will enable customers to drive their own connection assessments and explore multiple options prior to contacting SP Energy Networks for a formal offer, with the information provided by the tool sufficient for customers to assess the business case for their prospective investment.

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Method 1 looks to supply ConnectMore with information on the growing demand for public charging infrastructure by modelling the up-take of EVs on the transport network. The transport model built by our partner PTV will analyse the volume of EVs that pass through individual land parcels in the SP Manweb licence area, the dwell time of EVs at their destination / origin and the distance they have typically travelled to get there. The resulting heat maps for 2020-2050 will show how demand increases across the region and help futureproof investment.

Method 2 led by Smarter Grid Solutions, looks to develop, trial and assess the role of SCSs for EV infrastructure. In essence SCSs will look to maximise the utilisation of existing / new infrastructure to minimise the cost and disruption of connecting charge points to the network. The SCSs will utilise the inherent capability of most modern charge points to respond to command and control signals to avoid network overloads. The trials undertaken in 2020 and 2021 will look to assess the performance of a range of SCSs and the impact they have on customers' ability to reliably charge their EV as well as the business case for investors.

Method 3 led by EA Technology brings together the learning from both of the above as well as the most comprehensive model of the electricity Low Voltage network built to date to deliver the ConnectMore tool.

Timescale

Charge is a 4-year project that will finish in March 2023. Over the course of the project there are several major deliverables that will provide value to customers.

In early 2020 the transport model for the SP Manweb licence area will be complete and assessments of the EV uptake scenarios complete by the end of the summer.

In the summer of 2020 the limited trial of several SCSs will commence and run for approximately 1 year, after which a broader trial encompassing a wide range of charging stations will commence.

In late 2021 the beta version of ConnectMore will be released to the public, before the final version goes live in the final year of the project.

At each major stage SPEN will look to brief our stakeholders on the progress made and the opportunity to access any valuable information that will assist in shaping the deployment of chargers on the network.

Update

- The SP Manweb transport model has been built by our project partner PTV and will be validated and delivered to SPEN in January. This model will represent the 2018 transport network and will be utilised by the project to simulate a range of EV uptake scenarios to identify the public charging needs across the licence area out to 2050.
- After much extensive stakeholder engagement, a shortlist of trial sites for the limited trials of smart charging solutions will be drawn up in January and work begin in designing the schemes.
- An initial assessment has already been made on the potential role and benefit of SCSs, which has highlighted the key role and value they will have in reducing the amount of investment and disruption caused connecting public charging infrastructure.
- Two workshops have been held to identify the user requirements for the ConnectMore tool, including significant input from the local authorities with SPM.
- A decision has been made to accelerate the production of the comprehensive Low Voltage network model that underpins the ConnectMore model, once delivered in 2020 the model should assist SPEN and stakeholders shape investment plans for EV charging infrastructure.