FUTURE TRANSPORT SYSTEMS

integrating transport with infrastructure

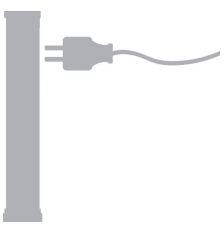
Cluster charging and grid impacts

It is expected that "clusters" of EV drivers will emerge, with neighbourhoods fitting socio-economic and driving patterns making early adoption of EVs attractive.

The impact on the grid could be significant if there are multiple charging events at the same time of day. This impact could be augmented if micro-renewable generation is also present.

To better understand the impact, a pilot project will run in the North East, involving a regional DNO, a major new residential development incorporating PV in every home, EV ready homes and the introduction of electric vehicles to the site.

Domestic infrastructure development



The new Pod Point domestic recharging unit. Other models are also coming to market from many suppliers.

Supporting the Switch EV trial in the North East, Future Transport Systems is working with the Plugged in Places delivery team at One North East to ensure trial candidates can recharge safely and conveniently, at home, at work or in town centres.

With 6 new vehicle platforms being developed for the Switch EV trial, as well as growing fleets of electric vehicles arriving in North East, a comprehensive charging infrastructure is required to support early adopter drivers. With the challenge of making recharging as convenient as petrol refuelling, domestic recharging is likely to become the most prevalent method as the industry develops.

Introducing new electrical technology into people's homes brings issues of safety and logistics, which are being mapped, managed and resolved ready for vehicle deliveries. British and European Standards are being developed to ensure the safety of the charging points, and close work with technical experts has resulted in mode 3 domestic units being procured in the North East.

All domestic installations are being preceded by a house wiring check. If required, a 32 amp mains spur is installed. Where needed the house wiring will be updated to allow for 7kW charging.

Work with vehicle manufacturers has been essential to ensure the planned domestic charge units will be compatible with their vehicles, and with the charge point suppliers to ensure the desired products are brought to market.

The complexity of installing domestic infrastructure is being fully realized, and best practice guides are being developed to share the knowledge gained.

In these early stages of domestic recharging, certain conditions have to be met by vehicle users. These include the use of a garage or private driveway, wiring systems capable of accepting the additional electrical load and the willingness for on site surveys, unit installations and connections. Through the Switch EV trial, all charging incidents will be recorded and analysed providing valuable data for future market development.