



Customer	Western Power Distribution (WPD)
Size of project	£5.8m
Start date	April 2016
End date	October 2019

For this globally significant project, EA Technology worked with WPD to improve understanding of the impact that domestic charging of electric vehicles on the electricity network, and trial smart charging as a solution to manage the additional demand. The growth of Electric Vehicles (EV) presents a new challenge for the UK's electricity transmission and distribution network operators (DNOs). As groups of neighbours acquire EVs, localised clustering is likely to have a great impact on electricity networks.

Electric Nation was an Ofgem NIA-funded project that has built on from the findings of the My Electric Avenue and Smart EV projects. The Electric Nation project assessed the impact of EV growth on the network whilst reviewing smart charging capabilities and customer acceptance of managed EV charging systems. The project provided local electricity network operators with the tools to ensure that their networks can cope with the challenge of expedited EV uptake, whilst avoiding network reinforcements.

EA Technology built the Network Assessment Tool (NAT) which provides WPD with a software tool that predicts which parts of their network are likely to be affected by Plug in Vehicles (PIV) uptake. The tool identifies the level of penetration that would cause issues on the Low Voltage network, triggering reinforcements.

Mitigating the need for network reinforcements through smart charging opportunities will reduce costs and accelerate EV uptake.

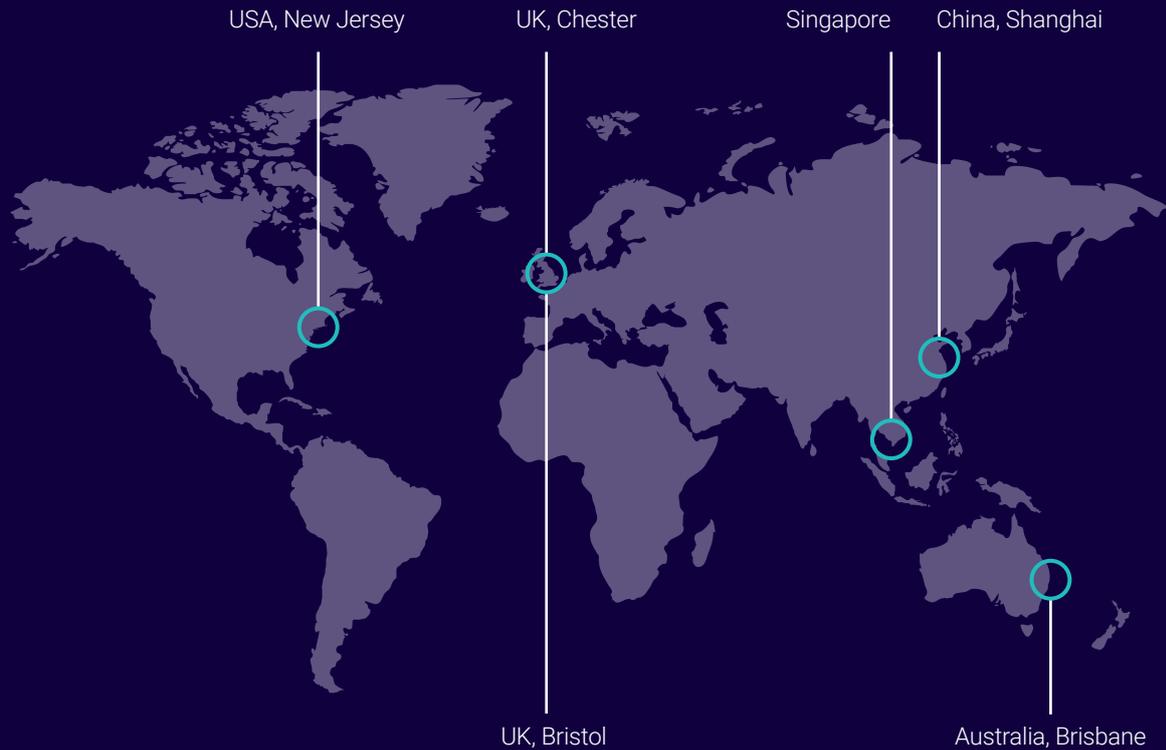
EA Technology played a pivotal role in the successes of Electric Nation through managing the project and trials, including testing smart charging algorithms and maintaining participant engagement. This was through active communication and dissemination activities such as website management and supporting participant recruitment.

Electric Nation has recruited 673 plug-in hybrid and full electric vehicle drivers into the trial, each equipped with a smart charger at their home. This enabled the project to draw observations and conclusions relating to driver attributes, charging behaviours, acceptance of smart charging and reaction to time of use tariffs. Charging behaviour examined in the project includes the time when charging began, charging frequency, energy consumption (both per annum, and for each charge session) and use of timers. The data showed considerable flexibility in the charging load, particularly in the evening peak, indicating that smart charging is unlikely to inconvenience the majority of drivers.

EA Technology led the data analysis from the Electric Nation trials and dissemination of project findings, arming DNOs with the necessary information and tools to prepare for the dramatic increase in EV uptake.

Global Footprint

At EA Technology we specialise in asset management solutions for owners and operators of power network assets.



Founded in 1966 we have over 50 years' experience in the industry and 6 regional offices around the world to support our global customer base.

We work with a lot of our clients on a long-term basis to help them safeguard their power networks.

We advise our clients on strategy and implementation of a range of technology solutions to manage power assets, delivering maximum life and minimise cost.



Safer, Stronger, Smarter Networks

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