

**NEXT GENERATION
NETWORKS**

Marketing and PR Report
January 2019
Electric Nation



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Glossary

Abbreviation	Term
BEIS	Department for Business, Energy & Industrial Strategy
DfT	Department for Transport
EV	Electric Vehicle
LCNI	The Low Carbon Network and Innovation Conference
LCV	The Low Carbon Vehicle Event
Ofgem	Office of Gas and Electricity Markets
OLEV	Office for Low Emission Vehicles
PR	Public relations
SMMT	Society for Motor Manufacturers and Traders
WPD	Western Power Distribution

1 Introduction

This report provides a comprehensive overview of all marketing and public relations (PR) activity that has taken place for the Electric Nation project (the Project) from October 2018 to January 2019. EA Technology manages all aspects of marketing and PR for the Project on behalf of Western Power Distribution (WPD) and its project partners and suppliers. Automotive Comms delivers strategic direction and all associated marketing and PR services for the Electric Nation project.

1.1 Electric Nation

Electric Nation is the customer-facing brand of CarConnect, a Western Power Distribution and Network Innovation Allowance funded project. WPD's collaboration partners in the project are EA Technology, DriveElectric, Lucy Electric GridKey and TRL.

Electric Nation, the world's largest electric vehicle (EV) trial, is revolutionising domestic plug-in vehicle charging. By engaging 500-700 plug-in vehicle drivers in trials, the project is answering the challenge that when local electricity networks have 40% - 70% of households with electric vehicles, at least 32% of these networks across Britain will require intervention.

The project is developing and delivering a number of smart charge solutions to support plug-in vehicle uptake on local electricity networks. A key outcome will be a tool that analyses plug-in vehicle related stress issues on networks and identifies the best economic solution. This 'sliding scale' of interventions will range from doing nothing to smart demand control, from taking energy from vehicles and putting it back into the grid, to traditional reinforcement of the local electricity network where there is no viable smart solution.

The development of the project deliverables is being informed by a large-scale trial involving plug-in vehicle drivers that will:

- Expand current understanding of the demand impact of charging at home on electricity distribution networks of a diverse range of plug-in electric vehicles - with charge rates of up to 7kW+, and a range of battery sizes from 20kWh to 80kWh+.
- Build a better understanding of how vehicle usage affects charging behaviour.
- Evaluate the reliability and acceptability to EV owners of smart charging systems and the influence these have on charging behaviour. This will help to answer such questions as:
 - Would charging restrictions be acceptable to customers?
 - Can customer preference be incorporated into the system?
 - Is some form of incentive required?
 - Is such a system 'fair'?
 - Can such a system work?

The results of this project will be of interest and will be communicated to the GB energy/utility community, UK government, the automotive and plug-in vehicle infrastructure industry and the general public.

2 Marketing and PR Aims and Objectives

2.1 To support recruitment - overview

A key aim of marketing and PR under the Electric Nation project is to demonstrably support DriveElectric's customer recruitment goals to achieve 500-700 WPD customers recruited into the project trials by summer 2018. To this end, weekly project management telephone calls organised and facilitated by EA Technology between itself, Automotive Comms and DriveElectric have ensured that the marketing activity has provided the recruitment campaign with the tools that it needs in order to boost and maintain customer engagement in the project. Now that the recruitment stage of the project is now complete these calls are held bi-weekly. WPD is invited onto these calls on an *ad hoc* basis to keep the WPD team informed, engaged and updated as required.

2.2 To support dissemination - overview

Formal reporting and dissemination of information and results, being technical where appropriate, is required to relevant government-related organisations such as Ofgem, OLEV, BEIS and DfT, as well as the utilities (including all GB distribution network operators, energy suppliers and generators), energy industry and consultants. The primary message to these stakeholders is focused on progress and results of the trial, and technical measures that can be adopted around electric vehicle demand management, and potentially vehicle to grid technologies.

More general and less technical cross-sector and customer dissemination of information and results will be directed to Government, public sector, academic and professional bodies and institutions, and to the general public to an extent.

3 Marketing and PR Strategy

The marketing and PR strategy underpins all communications and dissemination activity for Electric Nation. It establishes a uniform approach to describing the project, its funding mechanism and key collaboration partners, together with both a long and short summary for the project (Appendix 1), as well as the key communication messages for use by all project partners and suppliers.

3.1 Communication with trial participants

As the project moves further into the demand management phase with its customers, management of trial participants' expectations continues to be critical. EA Technology is supporting DriveElectric's engagement with trial participants through provision of timely and appropriate letters and email communications, as well as information on 'closed' web pages on the project website, offering information on the Greenflux and CrowdCharge apps.

A newsletter was circulated to project participants in mid-January making them aware of arrangements for the end of the trial and reminding them that a final survey will be issued to them.

A letter will be posted to trial participants in February thanking them on behalf of the project, and the project partners for their participation in project.

4 Activity in this Reporting Period

During this period, activity has been geared towards:

- Dissemination of early project learning has continued at Balancing Act in Bristol and an IET event in Manchester,
- A page has been added to the project website about the Network Assessment Tool
- Creation of a project newsletter updating stakeholders on project news
- Creation of a press release to celebrate the end of the trial period of the project
- A project newsletter issued to project participants
- News items published on the project website highlighting project news,
- The project website has been updated to reflect the end of the trial period
- Planning for further learning dissemination as the project enters its final stage.

4.1 PR and event presence to support dissemination - activity

Nick Storer from EA Technology presented latest findings from the Electric Nation project at the 'Future Networks – A Balancing Act' conference in Bristol on 21st November 2018. A review of the event and information about the project was included in the Western Power Distribution magazine 'Powerlines' (December 2018).



Figure 1: Nick Storer presenting the interim project findings at 'Future Networks – A Balancing Act', 21 November 2018

Esther Dudek from EA Technology presented latest findings from the Electric Nation project at an IET event titled 'Electric Vehicle Charging and their Impacts on the Electricity Distribution Networks' in Manchester on 13 December 2018.



Figure 2: Esther Dudek presenting the interim project findings at 'Electric Vehicle Charging and their Impacts on the Electricity Distribution Networks', 13 December 2018

A page has been added to the Electric Nation website to provide information on Network Assessment Tool. The page provides information about the capabilities of the software application and how it will benefit WPD (Appendix 2).

The Electric Nation website has been modified to report the end of the trial stage of the project.

4.2 PR and event presence to support dissemination - planning

Planning is underway regarding events to disseminate final project learning. The project team is identifying relevant events to attend and speak at throughout 2019, as well as discussing other dissemination methods. The PR to publicise this event, and subsequently to disseminate findings from the project are being planned.

4.3 Newsletter

A newsletter will be circulated via email to stakeholders in late January. The newsletter will contain:

- News that the trial has ended
- Information about the Network Assessment Tool
- Link to the Findings so Far leaflet

- Information about project dissemination

4.4 Social media

Social media are recognised as key tools to support both trial participant recruitment activity and dissemination in the Electric Nation project. All project-related social media activity is supported by a WPD approved Social Media Policy, which has been circulated to all project partners and suppliers.

4.4.1 Twitter

Responsibility for managing the Twitter account is split between EA Technology and DriveElectric. This approach maintains the delineation between DriveElectric and its customer interface role, and EA Technology, which must have no direct communication with customers, as per the project’s Customer Engagement Plan.

EA Technology is responsible for:

- Maintaining a pipeline of relevant EV-industry related news tweets (and retweets)
- Tweeting news directly linked to the Electric Nation Twitter account
- Tweeting Electric Nation project updates to support learning dissemination activities on behalf of the project and its partners / suppliers

During June 2018 it was decided that a Social Media Contractor would be better placed to manage the Electric Nation Twitter account. The Contractor is regularly updated with project news by members of the Electric Nation team and provided with project learning and highlights to turn into tweets. A fortnightly schedule of tweets is agreed in advance, with the flexibility to alter arrangements as necessary.

DriveElectric is responsible for:

- All customer interaction and communications through the Electric Nation Twitter account. This includes responding to all queries, complaints and comments in general in a timely manner
- Monitoring the Electric Nation Twitter account on a daily basis to enable timely responses, and to manage unwanted contacts
- Scheduling daily / bi-daily tweets to support recruitment activities
- Tweeting about Electric Nation EV test drive events and related recruitment activities

The Electric Nation Twitter account (@ElectricNation_) was launched at LCV 2016 to align with the official launch of the project and its recruitment activity. The account achieves a good level of retweet activity, including regular retweets by WPD, the Office for Low Emission Vehicles, and project partners and suppliers.

Table 4.1: Twitter activity increase from last reporting period

Item	Last reporting period	Current reporting period	% increase
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Twitter Followers	2,044	2,158	5%
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4.4.2 Facebook

Electric Nation has a Facebook page that is customer-facing and is therefore managed by DriveElectric, albeit its set-up was supported by Automotive Comms to ensure branding and message were in line with strategy. Progress on this front is reported under separate cover by DriveElectric.

4.5 Project News reports

In this reporting period there have been two items of project news produced on the [project news](#) section of the website, and disseminated via Twitter. However, these have not been circulated to the wider PR agencies. A press release is scheduled for the end of the January 2019 to celebrate the end of the trial.

5 Next steps

The Project team at EA Technology will continue to work alongside project partners to ensure that all marketing and PR activity supports partners to achieve their deliverables. Trial recruitment has come to a close, so communication and marketing activity will now focus on dissemination of learning and managing any issues that may arise with trial participants in PR terms.

A strategy is being developed to effectively disseminate learning from the Electric Nation project. It is expected that this will include attendance at industry events throughout 2019 such as:

- A project specific learning dissemination event
- Cenex LCV
- Low Carbon Network and Innovation Conference

The project team is also considering the production of other learning material such as videos and hosting interactive webinars.

Appendix 1 – Project description and summaries from Marketing and PR Strategy

Uniform project description – to be included in all project communications

Electric Nation is the customer-facing brand of CarConnect, a Western Power Distribution (WPD) and Network Innovation Allowance funded project. WPD's collaboration partners in the project are EA Technology, DriveElectric, Lucy Electric GridKey and TRL.

Long summary

The Electric Nation project will develop and deliver a number of smart charge solutions to support plug-in vehicle uptake on local electricity networks. A key outcome will be a tool that analyses plug-in vehicle related stress issues on networks and identifies the best economic solution. This 'sliding scale' of interventions will range from doing nothing to smart demand control, from taking energy from vehicles and putting it back into the grid, to traditional reinforcement of the local electricity network where there is no viable smart solution.

The development of the project deliverables will be informed by a large-scale trial involving plug-in vehicle drivers that will:

- 1. Expand current understanding of the demand impact of charging at home on electricity distribution networks of a diverse range of plug-in electric vehicles - with charge rates of up to 7kW+, and a range of battery sizes from 20kWh to 80kWh+.*
- 2. Build a better understanding of how vehicle usage affects charging behaviour.*
- 3. Evaluate the reliability and acceptability to customers of controlling the demand for electricity/taking energy from vehicles and putting it back into the grid.*

The results of this project will be of interest and will be communicated to the GB energy/utility community, to UK government, to the automotive and plug-in vehicle infrastructure industry and to the general public.

Short summary

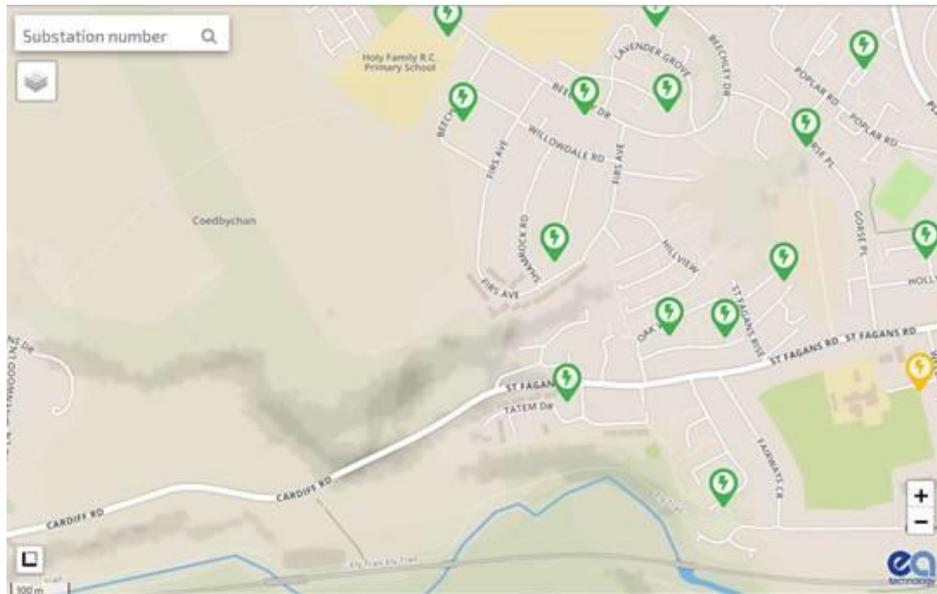
Electric Nation, the world's largest EV trial, is revolutionising domestic plug-in vehicle charging. By engaging up to 500-700 ¹plug-in vehicle drivers in trials, the project is answering the challenge that when local electricity networks have 40% - 70% of households with electric vehicles, at least 32% of these networks across Britain will require intervention. Electric Nation is pioneering our electric future.

¹ Updated from '500' in the first strategy draft, June 2016, to '500-700' in a marketing strategy update session, October 2016.

Appendix 2 – Network Assessment Tool web page

NETWORK ASSESSMENT TOOL

The Network Assessment Tool is a software platform being developed by EA Technology for Western Power Distribution (WPD) as part of the Electric Nation project.



The software platform will provide WPD's engineers who plan Low Voltage (LV) networks with a new tool to view and assess LV network operating conditions under future EV penetrations. The tool will indicate where and when network performance might be detrimentally affected by EV charging and so indicate where network reinforcement or replacement might be needed in the future. It will also include an option to assess the potential benefit of using smart charging to delay or avoid the need to reinforce networks that might be overloaded by EV charging loads.

The Network Assessment Tool, which was recently demonstrated at the Low Carbon Network and Innovation Conference 2018, presents engineers with an indicator of the utilisation level of LV substations in WPD's operational area. The potential impact of EV uptake, through the installation of EV chargers in homes, on the utilisation (percentage of design capacity used at peak demand periods) of each substation and the cables or overhead lines (feeders) that the substation serves is calculated and displayed. The impact of this extra EV charging load on supply voltage along each feeder is also calculated and indicated where the voltage drops below an acceptable limit. The Network Assessment Tool highlights individual substations or feeders that may require investment as EV uptake increases.

The Tool also displays the location of domestic EV chargers already connected to WPD's network, the future forecasts of EV uptake for each substation and allows WPD's engineers to model the effect of a number of EVs of their choice on an individual substation.

The Network Assessment Tool is populated with WPD asset data. Load flow data is calculated using EA Technology's DEBUT™ load flow assessment program. Data on EV uptake forecasts has been prepared by Regen for WPD.

Appendix 3 – Website Project News Items

Published since last report

25 OCTOBER 2018

LATEST ELECTRIC NATION UPDATES AT LCNI 2018

Electric Nation launched its new 'What we've learnt so far' publication at the 2018 Low Carbon Networks Innovation (LCNI) Conference in Telford which took place on 16 & 17 October.



This brochure contains some interim findings in the area of participant customer research. Electric Nation is learning a lot about drivers' charging behaviours by using data from their smart chargers to understand the potential mass impacts on electricity distribution networks, and how these might change depending on plug-in vehicle types and battery sizes in the future – as the mix of pure EVs v Plug-in Hybrids is likely to change.

[The 'What we've learnt so far' brochure is available as a PDF download in the Resources section of our website.](#)

Nick Storer, Electric Nation's Project Manager, also gave a presentation at the event about these findings, and about latest progress with the project overall.

Also, at LCNI, there was a lot of interest in the new Network Assessment Tool, which can forecast the potential impact of EV take-up on particular low voltage (LV) substations across the WPD license area. The project team was busy providing demonstrations of this tool to delegates at LCNI.

LATEST FINDINGS FROM ELECTRIC NATION TO BE PRESENTED AT BALANCING ACT, 21 NOVEMBER 2018

The latest learnings from the Electric Nation project will be presented at WPD's Balancing Act Conference, which takes place in Bristol on 21 November 2018.

ELECTRIC NATION

PARTICIPANT CUSTOMER RESEARCH

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. The primary driver of the plug-in hybrid or EV charged using the smart charger is asked to complete customer research surveys at key points in their journey through the trial.

SOME ATTRIBUTES OF EV DRIVERS INVOLVED IN THE TRIAL:

- AGE**
 - 37% 46-55
 - 20% 36-45
 - 19% 26-35
 - 17% 56+
 - 1% 18-25
- SOCIO-PROFESSIONAL CATEGORY**
 - 41% II
 - 31% A
 - 10% C1
 - 6% E
 - 6% C2
 - 1% C1
- EMPLOYMENT CHARACTERISTIC**
 - 64% Employed over 30 hours
 - 16% Self employed
 - 12% Retired
 - 4% Employed part-time 15-30 hours
 - 3% Employed part-time less than 15 hours (DL), looking after children (DL), Other (DL)
- WORKING PATTERN**
 - 93% Mostly daytime work
 - 6% Shifts that change from day to day or week to week

OWNERSHIP: 51% Owned Pure Electric Vehicles, 49% Owned Plug-in Hybrid Vehicles

RESIDENCE: 38% Live in an urban area, 35% Live in a suburban area, 26% Live in a rural area

CHARGING: 84% Mostly home charge, 8% Mostly work charge, 3% Mostly service station charge

While they are not representative of the driving population as a whole, they will enable the project to draw observations and conclusions relating to driver attributes, charging behaviours and acceptance of smart charging.

THROUGHOUT THE TRIAL, IN SPITE OF MANY DRIVERS EXPERIENCING REGULAR EV DEMAND MANAGEMENT, 90% OF THE TRIAL PARTICIPANTS REMAIN NEUTRAL OR SATISFIED WITH THEIR CURRENT CHARGING ARRANGEMENTS.

WHAT WE'VE LEARNT SO FAR

The project is learning a lot about drivers' charging behaviours by using data from their smart chargers to understand the potential mass impacts on electricity distribution networks, and how these might change depending on plug-in vehicle types and battery sizes in the future. This enables the results of the trial to look to the future as battery EVs evolve and the mix of plug-in hybrids vs battery EVs changes.

The time of day when EV drivers plug in to charge and the amount of energy they consume (how long they charge for) is vitally important to understanding EV charging load diversity.

Figure 1 illustrates the difference between weekday and weekend EV start-of-charging (includes delayed charging through use of timers).

If unrestricted charging was allowed as soon as an EV is plugged in then the predicted increase in peak domestic electricity demand on weekdays due to EVs is obvious.

However, Electric Nation has found that EV drivers do not charge their EVs every day and nor do they all wait until their battery is empty before charging.

Figure 2 shows the spread of average proportion of the battery capacity consumed by each participant in charging their EV (eg a charge session consuming 20kWh of electricity for a vehicle with a 40kWh battery capacity = 50%).

Trial data suggests that the bigger the vehicle battery, the less likely that it will require a full charge when it is plugged in.

This significantly contributes to the diversity of EV charging behaviour.

A significant number of the Electric Nation trial participants use their EVs on-board timer to take advantage of Economy 7 type tariffs. Figure 3 illustrates use of timers by trial participants.

Trial participants with dual-rate meters (who can use Economy 7 type tariffs) are more likely to use a timer to charge overnight than those who have single rate meters – pointing to time of use tariffs as a way to incentivise EV charge management, and reduce charging during the current evening peak in domestic demand.

This understanding of how simple time of use tariffs, like Economy 7, impacts charging behaviour indicates how smart meters-enabled time of use tariffs could contribute to avoiding EV charging at the peak domestic electricity demand period.

FIGURE 1: % of Charging Events Starting in Each Hour - Weekdays and Weekends

FIGURE 2: Average % of Battery Capacity Filled by Each Participant - by Battery Size

FIGURE 3: Use of Timers - by Time of Plug-in

FIND OUT MORE WWW.ELECTRICNATION.OBS.UK

At 10.30am Nick Storer from EA Technology – Electric Nation's project manager – will share what is known so far about participant customer research, along with other learning from the project. The presentation will be introduced by Ricky Duke – Innovation & Low Carbon Networks Engineer, WPD.

This Balancing Act Conference will be focusing on Electric Vehicles.

The UK Government is committed to the electrification of transport and a zero-emission future. Progress towards this mission has already seen a significant investment into low carbon vehicles, grants and schemes, and the installation of charge points across the UK.

The impact of the adoption of electrification of transport is widespread and this conference will provide an opportunity to discuss the challenges that electricity networks are facing, and the solutions WPD is working towards.

The conference will also provide an opportunity to explore the latest learnings from WPD's electric vehicle and innovation projects related to EVs.

Networking opportunities and Q&A sessions will also be available throughout the day.

The agenda includes:

09.30 Registration & refreshments

10.00 Adapting the electricity network for EV uptake

Roger Hey – Future Networks Manager, WPD

10.30 The latest learnings from the Electric Nation project

Nick Storer, EA Technology

11.40 Panel Session – Making owning an EV simple and easy

13.00 LV Connect & Manage project – Optimising the grid, homes and EVs

Samuel Jupe, Nortech Management Limited

14.00 Future WPD projects and plans – EV data, filling stations and on-street charging

Gill Nowell, ElectraLink

Max Hudson, IBM

Ricky Duke – Innovation & Low Carbon Networks Engineer, WPD

14.30 WPD Panel of experts – Q&A from the day

View more information at:

<https://www.westernpower.co.uk/news-and-events/latest-events/wpd-balancing-act-conference>

