

NIA Project Registration and PEA Document

Date of Submission

Mar 2021

Project Reference Number

NIA_UKPN0073

Project Registration

Project Title

Enable

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NIA_UKPN0073

Project Licensee(s)

UK Power Networks

Project Start

March 2021

Project Duration

1 year and 1 month

Nominated Project Contact(s)

Shira Lappin

Project Budget

£254,000.00

Summary

Disabled motorists who do not have access to off-street parking will require on-street charging solutions as they transition to EVs. These motorists will have specific needs, with limited flexibility on where they can park and accessibility concerns for charging solutions.

If all disabled parking bays will need to be electrified, this could have a significant impact on our network. Research by Ricardo estimates that up to 1.35 million disabled drivers will be partially or wholly reliant on public charging infrastructure. If we assume, based on population, that around a third of those drivers are within our area that will be nearly half a million customers. If we know where these bays are, we can plan to ensure disabled EV motorists' needs are met without any detrimental effect to our network.

Nominated Contact Email Address(es)

innovation@ukpowernetworks.co.uk

Problem Being Solved

Disabled motorists who do not have access to off-street parking will require on-street charging solutions as they transition to EVs. These motorists will have specific needs, with limited flexibility on where they can park and accessibility concerns for charging solutions.

If all disabled parking bays will need to be electrified, this could have a significant impact on our network. Research by Ricardo estimates that up to 1.35 million disabled drivers will be partially or wholly reliant on public charging infrastructure. If we assume, based on population, that around a third of those drivers are within our area that will be nearly half a million customers. If we know where these bays are, we can plan to ensure disabled EV motorists' needs are met without any detrimental effect to our network.

Method(s)

A research project, in partnership with local authorities, and Motability to explore available data and evidence to identify the needs of disabled motorists with respect to on street charging, the location of disabled bays and the impact of their electrification on our network. This will help us to plan appropriate investment to ensure that bays can be electrified to serve our customers' needs. This work can also feed into local area energy planning with councils as part of their wider on-street charging strategy.

The project will combine quantitative (i.e. identifying locations) and qualitative (engaging with stakeholders to learn more about disabled motorists needs) research.

Scope

Phase 1 will deliver:

- Landscape and stakeholder mapping to identify key stakeholders (e.g. disabled motorists, charities and organisations representing disabled people, community groups, local authorities, central government, chargepoint operators) and data sets for market sizing;
- Data collection;
- Literature, policy and practice review to identify developments and best practice in provision of accessible charging infrastructure (including existing information provision for disabled motorists)
- Theory of change of potential impact on the network and our role in facilitating uptake
- Detailed research and stakeholder engagement plan for phase 2

Phase 2 will deliver:

- Detailed stakeholder engagement and research as per plan from phase 1
- Market sizing data analysis using data collected in phase 1
- Network impact modelling, potential for smart solutions, and how this fits with Local Area Energy Plans

Phase 3 will deliver:

- A report detailing findings and next steps, including details of UK Power Networks' role in facilitating uptake
- Development of a coordinated approach with local authorities within local area energy planning (e.g. planning tools, business models)

Learning dissemination event for wider stakeholders

Objective(s)

The objectives and outcomes are:

- To understand the needs of disabled EV drivers, in particular those reliant on on-street parking and charging
- To understand the location and spread of disabled parking spaces within our area, where possible
- To understand the network implications of the electrification of these disabled parking spaces, and to identify an appropriate investment plan accordingly
- To understand the barriers to electrification of disabled parking spaces and develop an approach to overcome these
- To develop a coordinated approach with local authorities to serve the needs of disabled EV drivers that can be delivered within Local Area Energy Plans
- To identify areas for further investigation/trials

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The project will be successful if we are able to clearly understand and articulate the barriers to the electrification of disabled parking spaces and the needs of disabled EV drivers who use them. This will be through the delivery of:

- An assessment of the needs of disabled EV drivers who park on-street;
- An assessment of the barriers and opportunities for electrifying on-street disabled parking bays;
- An assessment of the network implications of electrifying disabled parking bays and a recommendation how to facilitate this;
- Development of a coordinated approach with local authorities that ensures disabled bays are considered in local area energy planning;
- Engagement with a wide range of stakeholders in this space to both inform findings and share them back; and
- A plan for further areas of investigation/next steps.

Project Partners and External Funding

It is expected a number of local authorities will participate in the project and contribute staff time.

A partner organization to deliver the research and analysis will be identified through a competitive tender process.

Motability (the charity) will be a project partner, bringing expertise and helping to convene relevant stakeholders.

There is no additional external funding to this project.

Potential for New Learning

The project will deliver learnings on the needs of disabled EV drivers who park on-street, their barriers to adoption, and the barriers to electrifying on-street disabled parking bays. It will also deliver a theory of change identifying the role of the DNO in facilitating this adoption and ensuring these customers are not left behind.

It will also deliver learnings on the network impact of electrifying disabled on-street bays, whether a specific investment model is necessary to facilitate this, and how DNOs and local authorities can work together to ensure provision is made for this customer group.

These learning will be disseminated through different channels including:

- Publication of clear and accessible reports on findings and new approaches developed;
- Events with relevant stakeholders e.g. other DNOs and local authorities to share learnings; and
- Publication of relevant information for disabled EV drivers on our website

Scale of Project

To ensure that the project provides learning that is relevant to all DNOs, we will engage with a range of local authorities and other stakeholders to assess barriers and opportunities in a range of settings. To this end, it is planned to work with local authorities across UK Power Networks' licence areas and to engage as wide a base of stakeholders as possible during this research stage. This scale of research and engagement is necessary to guarantee the external validity of our findings.

Technology Readiness at Start

TRL3 Proof of Concept

Technology Readiness at End

TRL5 Pilot Scale

Geographical Area

As described above, it is planned to work with local authorities across UK Power Networks' licence areas. Data analysis on network impacts will also be undertaken across UK Power Networks' licence areas.

Revenue Allowed for the RIIO Settlement

None.

Indicative Total NIA Project Expenditure

The total expenditure that UK Power Networks expects to incur for this project is £254,000 of which £228,600 will be recovered from NIA.

Project Eligibility Assessment Part 1

There are slightly differing requirements for RII-1 and RII-2 NIA projects. This is noted in each case, with the requirement numbers listed for both where they differ (shown as RII-2 / RII-1).

Requirement 1

Facilitate the energy system transition and/or benefit consumers in vulnerable situations (Please complete sections 3.1.1 and 3.1.2 for RII-2 projects only)

Please answer **at least one** of the following:

How the Project has the potential to facilitate the energy system transition:

n/a

How the Project has potential to benefit consumer in vulnerable situations:

n/a

Requirement 2 / 2b

Has the potential to deliver net benefits to consumers

Project must have the potential to deliver a Solution that delivers a net benefit to consumers of the Gas Transporter and/or Electricity Transmission or Electricity Distribution licensee, as the context requires. This could include delivering a Solution at a lower cost than the most efficient Method currently in use on the GB Gas Transportation System, the Gas Transporter's and/or Electricity Transmission or Electricity Distribution licensee's network, or wider benefits, such as social or environmental.

Please provide an estimate of the saving if the Problem is solved (RII-1 projects only)

This research project aims to assess the best way to facilitate the electrification of disabled parking bays and to ensure disabled customers are not left behind in the EV transition. Disabled EV drivers would benefit from the financial savings of running an EV over an ICE vehicle, while councils may benefit from potentially cheaper connections for on-street chargepoints if these are incorporated into coordinated local area planning. This coordinated approach will link in with other projects we are working on in this space, such as Charge Collective.

Savings could be estimated following this project, once we have investigated these issues in more detail.

Please provide a calculation of the expected benefits the Solution

N/A – this is a research project

Please provide an estimate of how replicable the Method is across GB

This method could be applied across the whole of GB and applies to all network licensees, since there are disabled drivers in all locations. Previous research by Ricardo has estimated that 1.35 million disabled drivers will be partially or wholly reliant on public charging infrastructure by 2035.

Please provide an outline of the costs of rolling out the Method across GB.

N/A – this is a research project

Requirement 3 / 1

Involve Research, Development or Demonstration

A RII-1 NIA Project must have the potential to have a Direct Impact on a Network Licensee's network or the operations of the System Operator and involve the Research, Development, or Demonstration of at least one of the following (please tick which applies):

- ☐ A specific piece of new (i.e. unproven in GB, or where a method has been trialled outside GB the Network Licensee must justify repeating it as part of a project) equipment (including control and communications system software).
- ☐ A specific novel arrangement or application of existing licensee equipment (including control and/or communications systems)

and/or software)

☒ A specific novel operational practice directly related to the operation of the Network Licensees system

☒ A specific novel commercial arrangement

RIO-2 Projects

☐ A specific piece of new equipment (including monitoring, control and communications systems and software)

☐ A specific piece of new technology (including analysis and modelling systems or software), in relation to which the Method is unproven

☐ A new methodology (including the identification of specific new procedures or techniques used to identify, select, process, and analyse information)

☐ A specific novel arrangement or application of existing gas transportation, electricity transmission or electricity distribution equipment, technology or methodology

☐ A specific novel operational practice directly related to the operation of the GB Gas Transportation System, electricity transmission or electricity distribution

☐ A specific novel commercial arrangement

Specific Requirements 4 / 2a

Please explain how the learning that will be generated could be used by the relevant Network Licensees

The learnings generated by the project will be shared across all DNOs to help facilitate the electrification of disabled bays GB-wide. This includes information for other DNOs on how to engage with local authorities in local area energy planning to ensure that the needs of disabled EV drivers who do not have access to off-street parking are considered from the outset.

Given the government's 2050 Net Zero target and the climate change emergency declared by 300 local authorities in the UK, it is expected that the challenges experienced in the provision of on-street charging infrastructure in general, and for disabled bays in particular, are common to other areas in GB with local plans for air quality improvements and electrification of transport.

Or, please describe what specific challenge identified in the Network Licensee's innovation strategy that is being addressed by the project (RIO-1 only)

n/a

☒ Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

Is the default IPR position being applied?

☒ Yes

Project Eligibility Assessment Part 2

Not lead to unnecessary duplication

A Project must not lead to unnecessary duplication of any other Project, including but not limited to IFI, LCNF, NIA, NIC or SIF projects already registered, being carried out or completed.

Please demonstrate below that no unnecessary duplication will occur as a result of the Project.

We have undertaken:

- a review of the ENA Smarter Networks Portal;
- initial engagement with local authorities and DNOs; and
- a search for publications.

We have found one similar project, Equal EV, being undertaken by SSEN. However, these projects are sufficiently different in focus so that there is no unnecessary duplication. While Equal EV is looking at barriers to adoption of EVs for disabled drivers more widely, as well as smart solutions to these barriers such as wireless charging, we are focusing specifically on the on-street segment and the network impact of electrifying these parking bays. We have discussed this project with SSEN and agreed that the two projects are complementary, with scope for collaboration and joint sharing of learnings.

If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.

n/a

Additional Governance And Document Upload

Please identify why the project is innovative and has not been tried before

EV-focused innovation projects have not covered the needs of disabled EV drivers so far (with the exception of the complementary SSEN project identified above). UK Power Networks' extensive stakeholder engagement around EVs and consumer vulnerability highlighted the fact that disabled EV drivers who park on street may not have the same needs as other residential customers when considering their transport electrification, and local authorities have not yet begun to think about how to build these needs into their public charging network planning.

Relevant Foreground IPR

n/a

Data Access Details

n/a

Please identify why the Network Licensees will not fund the project as apart of it's business and usual activities

Currently there is no detailed understanding of disabled EV drivers as a group, their specific needs and how this interacts with the network. Therefore a significant piece of detailed research is required and the outcome of such research is uncertain. A better understanding of this large and diverse customer group will be key to improve customer service, and more specifically to facilitate the transport electrification journey for vulnerable customers. Due to the risk involved in the project and the uncertainty around the benefits that will be delivered to this customer group, these activities would not form part of our business as usual activities. In order to progress an innovative project which carries significant risk in implementation, additional innovation funding is required as a stimulus.

Please identify why the project can only be undertaken with the support of the NIA, including reference to the specific risks(e.g. commercial, technical, operational or regulatory) associated with the project

The project can only be undertaken as a research study given the fact that electrification of transport for disabled EV drivers is an unexplored territory for distribution networks operators. As noted in the NIA guidance, certain projects are speculative in nature and yield uncertain commercial returns. This is the case for this project. There is a commercial risk that the investment in such a detailed research piece would not directly result in tested solutions that can be deployed by DNOs to facilitate the EV uptake for this group. The objective of this project will be to investigate what is required to support disabled drivers throughout their journey and either confirm that the existing services and solutions are suitable for this group, or that alternative tailored solutions should be developed. This will ensure that disabled drivers, in particular those who park on-street, are not left behind in the transport decarbonisation journey.

This project has been approved by a senior member of staff

☒ Yes