Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form. The full completed submission should not exceed 6 pages in total.

NIA Project Registration and PEA Document

Date of Submission

Apr 2022

Project Reference Number

NIA_SSEN_0062

Project Registration

Project Title

Customer Led Electric Vehicle Early Registration (CLEVER)

Project Reference Number

NIA_SSEN_0062

Project Licensee(s)

Scottish and Southern Electricity Networks Distribution

Project Start

April 2022

Project Duration

0 years and 8 months

Nominated Project Contact(s)

Fraser Macintyre

Project Budget

£159,800.00

Summary

Project CLEVER will test the appetite of EV drivers and Heat Pump owners, including vulnerable customers, to participate in a consumer led LCT (Low Carbon Technology) registration process in support of increasing visibility of EV and Heat Pump proliferation on the LV network. This stage will fund DNO and LCT owner workshops to understand and map what data is essential for DNOs, and what data LCT owners are willing to provide. in addition, the project will explore which type of incentives, on an on-going basis, could be utilised to both increase visibility of EV & Heat Pump demand, and to guard against loss of visibility due to customer events e.g. a house move, acquiring a second EV or significantly changing Heat Pump demand.

Third Party Collaborators

ElectraLink

Nominated Contact Email Address(es)

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Problem Being Solved

The low notification rate of heat pumps (HP)s connected to, and Electric Vehicles (EV)s charging on the LV network inhibits effective DNO planning for managing additional demand on distribution networks, Customers and installers do not always notify DNOs of new residential Low Carbon Technology (LCT) connections, which results in the locations of these new connections not being known. Part of the problem is that Government grants that support EV smart charger installations are finite (due to end April 2022). Once these come to an end, the lack of high level information about location of charger installations, which comes from these schemes, could lead to an even greater gap in knowledge of EV demand on the LV network. Alternative solutions are needed for identification of the EVs and HPs already connected – and any on-going changes to location of charge points (e.g. when a customer moves house) or increased local demand. To date there has been no consumer-led approach to EV and heat pumps connections, i.e., where the EV drivers or heat pump owners themselves notify the DNO. This project is the first step being taken to address this issue.

Method(s)

This project will be delivered utilising best practice, iterative, emergent Agile Development Practices; ElectraLink has found this approach to be very successful in delivering innovation initiatives. Furthermore, Ofgem is now advocating Agile principles with its Strategic Innovation Fund (SIF) guidance.

The approach involves a series of stages starting with Proof of Concepts (POC), evolving through a Minimum Viable Product (MVP) to a Deployed Solution.

•**Stage 1 Research Proof of Concept (POC)** – The exploration and testing of customer appetites to engage with DNOs and project partners to provide EV and HP data, as well as the development and testing of engagement tools, application design ideas and prototypes. The scope of this NIA project is to deliver this Research Proof of Concept only.

•**Stage 2 Technical Proof of Concept (POC)** – This would undertake in a follow-on NIA project and only be pursued if Stage 1 is successful. Taking the learning and engagement experiences and feedback from Stage 1, a Technical POC will be developed that project users can engage and interact with, beyond the level of prototype sophistication provisioned for in Stage 1.

•If Stage 1 research into heat pump users does not provide the required levels of validation due to difficulties in finding heat pump customers, then further research may be undertaken in Stage 2.

•**Stage 3 Minimum Viable Product (MVP)** – This would be a follow-on stage and only be pursued if Stage 2 is successful. This stage would encompass the development of the Technical POC to MVP level of sophistication.

•**Stage 4 Deployment and Continual Evolution (BaU)** – If all three stages are successful, Stage 4 would consider the market roll out of the notification service and web and application services to customers.

Each stage has a checkpoint at the end with an option to:
•Continue to the next stage of the Initiative,

•Refocus the Initiative based on learnings to date, or

•Close the Initiative

The project will deliver a Research Proof of Concept (POC) only, through the following method:

DNO workshop/s: To understand the data essentials and data flows, from portal to DNO etc, and how this aligns with existing projects and processes. The workshops will organise data items in order of priority of usefulness to DNOs. The workshop will also investigate how data relating to vulnerable customers can be cross-referenced by CLEVER so that vulnerable customer data, such as Priority Service Registrations (PSR), can be updated as an additional project benefit.

LCT owner engagement: To understand what consumers could and would be willing to do to notify their DNO about installing an EV or HP, including customer messaging that could be used to encourage information sharing. Consumer research will investigate what incentives would increase consumer engagement e.g. information on the need for data sharing, reduced price products and services.

The approach for Heat Pumps will be closely aligned to the EV approach, although due to the lower numbers of Heat Pump owners, a smaller quantitative sample will be applied. The approach assumes that SSEN will provide data on the geographic location of Heat Pump owners to target via face-to-face interviewing. In addition, GenGame will support Accent MR in recruiting heat pump testers from their existing heat pump research customer pool and through their strategic partners, Evergreen Energy, who specialise in heat pump installations to private households. Evergreen Energy have outbound contact consent to contact c. 15 of their customers, and a network of c. 1500 heat pump installation contractors who can advertise the research opportunity to their end-customers.

Customer research with EV and Heat Pump owners will help identify barriers and motivators to data sharing, assess what type and level of data owners would be willing to share, and identify what factors (incentives) would encourage sharing of data. An incentive of £120 will be paid to each of the qualitative research participants to cover attendance of two online workshops and completion of online homework tasks. Quantitative heat pump owner participants would be offered a £5 incentive, in the form of a voucher or a charitable donation, for taking part in a questionnaire. This is in line with Market Research Society (MRS) best practice guidelines. Quantitative EV owner research participations will be recruited via commercial panels so no additional incentive will apply.

Qualitative research will help explore the concept in more depth, how to communicate and how to develop ongoing engagement between EV and Heat Pump owners and DNOs.

Quantitative research will provide feedback on EV and Heat Pump owners' attitudes towards data sharing.

Prototype testing of a mobile app with EV and Heat pump owners will provide real consumer reactions to example propositions to collect the desired information, and their comprehension and trust of these interfaces. These will build on existing mobile app interfaces from GenGame.

The findings will be reviewed and evaluated with SSEN (and against NIA Governance) at the end of the project to determine whether the POC findings do support the viability of progressing to a next, Technical POC, stage.

Scope

The scope of CLEVER, under this NIA funding application, is to deliver a Research POC to determine the feasibility of securing further DNO involvement to progress to Technical POC, Minimum Viable Product, and fully working Product.

The project consists of the following three phases:

Phase1 - DNO workshops

DNO workshops will be held to understand which data is essential and which is desirable for the purposes of consumer led EV and Heat Pump registration.

Phase 2 – LCT owner engagement

Primary research and prototype testing with EV drivers and Heat Pump owners to understand what they are willing and able to offer in terms of EV, ChargePoint and Heat Pump data, and in return for what incentive/s, and by what means.

A feedback loop will ensure that the knowledge gained from the respective stages is fed back into each other respectively. This will help optimise knowledge and reporting on what may or may not be feasible going forward to Technical POC (Technical POC being outside of the scope of this project).

Phase 3 – Reporting and recommendations

Written report and presentation on the workshops and research learnings and outcomes to enable an informed decision to be made on the feasibility of progressing to the Technical POC stage under a new initiative.

Objective(s)

The primary purpose of the Research POC is to validate the CLEVER project hypotheses
•EV and Heat Pump owners are willing and able to provide the requested information

•The information available from EV & Heat Pump owners is usable and valuable to the DNOs

The project objectives are:
-Identification of data requirements from both DNO and LCT owner perspectives to inform a future Technical POC to enable consumer led LCT registration and ongoing updates

-Identification of incentives required in return for consumer data input

-Identification of data input processes

-Delivery of a Research Proof of Concept to determine viability of a consumer-led approach to LCT registration

-Opportunity assessment to consider the viability of wrapping vulnerability registration and support into the (future) Technical POC project

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

Not applicable.

Success Criteria

The project will be deemed successful if it meets the following criteria:

The CLEVER project hypotheses (below) has either been validated or refuted:

•LCT owners are willing and able to provide the requested information

•The information available from LCT owners is usable and valuable to the DNOs

Specific success criteria would be:
-Knowledge capture and recommendation reports as a result of the DNO workshops and primary LCT owner research

-Delivery of a Research POC that recommends a pathway to Technical POC (or otherwise)

-Opportunity assessment report to determine viability of wrapping vulnerability registration into next steps (Technical POC)

Project Partners and External Funding

CLEVER is a collaborative project between Scottish and Southern Electricity Networks (SSEN) and its trusted third-party delivery body, ElectraLink. SSEN will be leading the project, and ElectraLink is its nominated supplier.

ElectraLink will subcontract with Accent MR in support of the customer research element of the project (primary EV driver and heat pump owner research), and GenGame who will bring their experience of designing and building mobile apps for energy consumers and provide pre-developed engagement templates that will be tested as part of the research. This will enable the project to identify an effective means of engaging with LCT owners.

There is no external funding.

Potential for New Learning

The project team will work with the relevant DNO parties and EV drivers to understand and assess the viability of a consumer-led approach to EV and Heat Pump registration/ notification, and on-going updates e.g., when someone moves house, gets a second electric vehicle etc.

New learning will come:

-By understanding what data, from both the DNO and LCT owner perspective, can and might be offered up in lieu or as well as a formal notification of LCT connections on the LV network.

-By virtue of understanding what mechanism is most suitable in terms of the notification mechanism.-Through determination of what incentives might be needed in order for an LCT owner to engage with the registration process, and how that engagement might be sustained.

-By assessment of the viability of a consumer-led approach to registration of vulnerable customers, and how this might form part of a subsequent Technical POC.

Learning will be disseminated via project reports and across social media platforms and industry events such as ENIC.

Scale of Project

The project is research-based and therefore the bulk of the investment will be targeted at consumer engagement and online workshop delivery, with follow up reporting. The value in this project lies in its outcome – to recommend, or otherwise, moving forward with new funding towards a Technical POC to test the findings of this initial stage Research POC.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL4 Bench Scale Research

Geographical Area

EV and Heat Pump owners within the SEPD and SHEPD distribution areas will be targeted for engagement. There may be some crossing into other DNO areas due to the method of customer identification but as this project is primarily a consumer engagement exercise it is not critical to limit the engagement to SSEN customers.

Revenue Allowed for the RIIO Settlement

No revenue has been allowed for the project in the RIIO-ED1 settlement.

Indicative Total NIA Project Expenditure

The total expenditure expected from the project is £159,800 90% of which (£143,820) is allowable NIA expenditure. RIIO ED2 spend – None

Project Eligibility Assessment Part 1

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

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

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

This project will support the electrification of transport and heat by generating data for DNOs. This data will be used to improve network reinforcement and smart intervention requirement forecasts from increased EV charging and heat pump installations. Better network planning decisions will save customers money and reduce the possibility of EV charger curtailments.

The counterfactual is EV and Heat Pump connection installation notifications, which are already in operation. The current process relies on LCT owners proactively notifying DNOs, which can lead to a lack of information being provided. In addition, the current notification system does not account for people moving house or charging their vehicles from a standard 3-pin, 13A wall socket. Additionally, OZEV grants are per EV (not per property), therefore dedicated EV charger installation rates may be lower after home moves, mounting to higher rates of wall socket charging among EV home movers.

The CLEVER project aims to fill the existing gaps in the DNOs' EV charging and heat pump knowledge to help them facilitate the energy system transition.

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

Project CLEVER involves collecting data from DNO customers through direct engagement. This engagement presents an opportunity for DNOs to cross-reference their vulnerable customer data and update it to identify new vulnerable customers or update information about existing vulnerable customers. The updated data relating to vulnerable customers 'Will help DNOs provide a more effective level of service'

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 (RIIO-1 projects only)

CLEVER has the potential to improve the DNOs' understanding of current LCT installations and therefore the nature of low voltage network utilisation. This knowledge can help DNOs plan for smart interventions and network reinforcement to provide the following customer benefits:
•cost deferment savings from just-in-time planning,

•cost savings from reduction of LV network monitoring requirements,

•improvements to quality of supply / network reliability,

•reduction of EV smart charger curtailments leading to:

- Improved customer satisfaction
- CO2 saving from increased EV usage

•Improved understanding of Heat Pump uptake rates and sizes in different areas

Please provide a calculation of the expected benefits the Solution

Not required for this Research Project.

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

This project will focus on customers in SSEN's network areas, but it is expected that the information will be equally applicable to all 14 DNO licence areas.

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

The method / project learning could be applied equally to all areas of GB.

Requirement 3 / 1

Involve Research, Development or Demonstration

A RIIO-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

RIIO-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 new learning generated by this project can be applied and is of relevance to all Electricity Distribution Network licensees, given that visibility of EV and Heat Pump connections and demand is a challenge across all areas of GB. CLEVER has the potential to improve the DNOs' understanding of current LCT installations, and therefore the nature of low voltage network utilisation. This learning can help the DNOs to plan for smart interventions and network reinforcement.

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

n/a

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.

A consumer-led approach to LCT registration has not been looked at before, either through NIA or other mechanisms. CLEVER is the only project that is taking a consumer-led approach. CLEVER also aligns with BEIS's Coordinated Asset Registration Strategy. The consumer-led approach has been recognised by BEIS as a unique approach to the challenge of visibility of EVs on the LV network and pulling in data from EV drivers themselves. CLEVER will engage with BEIS on an ongoing basis to ensure optimal data-integration opportunity.

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

Project CLEVER is the only DNO innovation project engaging directly with LCT customers to support DNOs' understanding of LCT connections and demand across their networks.

Additional Governance And Document Upload

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

A consumer-led approach to EV and Heat Pump registration has never been researched or considered prior to this.

Relevant Foreground IPR

The Relevant Foreground IPR will be knowledge and reporting. The project will conform to the default IPR position under the NIA governance.

Data Access Details

As the LCT owner market research will be focused on the behaviours of Domestic Customers, in relation to their use of Electric Vehicles and Heat Pumps, use of the data captured may be constrained by GDPR or data privacy requirements.

We will work with our Market Research partners to ensure that:

•The purpose for which the data is being captured is understood by the respondents

•Any constraints on use of that data is understood by ElectraLink and SSEN

The SSEN data sharing policy is available here: https://www.ssen.co.uk/PrivacyNotice/

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

No allowances have been made for a consumer-led approach to EV and Heat Pump uptake in the RIIO-ED1 settlement. DNOs will need to fully understand the scale of the data and the willingness of consumers to participate ahead of any widespread EV and Heat Pump uptake.

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 focus on consumer-led EV and Heat Pump registration is beyond the scope of BAU projects and our current digitalisation strategy. NIA is the best mechanism to fund research projects such as this.

This project has been approved by a senior member of staff

☑ Yes