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

May 2024

Project Reference Number

NIA_SSEN_0076

Project Registration

Project Title

Equal LCTs

Project Reference Number

NIA_SSEN_0076

Project Licensee(s)

Scottish and Southern Electricity Networks Distribution

Project Start

February 2024

Project Duration

0 years and 10 months

Nominated Project Contact(s)

Tim Sammon, Innovation Programme Delivery Manager at SSEN

Project Budget

£532,125.00

Summary

Scottish and Southern Electricity Networks Distribution SSEN) wish to facilitate a just energy system transition to net zero, and are concerned that while Low Carbon Technology (LCT) uptake, interest in energy efficiency and the use of Low Voltage (LV) flexibility is increasing, offerings of these are not available for all consumers.

Equal LCTs aims to accelerate the development of enabling propositions for hard to reach and left behind consumers (i.e. those who do not currently have other forms of help, for example through government grants or schemes or through benefits) so that all segments of society can benefit from LCTs, energy efficiency, and LV flexibility and the enabling investments being made in electricity networks as part of the energy transition.

Nominated Contact Email Address(es)

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Problem Being Solved

Enabling all consumers and communities the opportunity to engage in the journey to Net Zero is a stated ambition across the United Kingdom (UK) and Scottish Governments, and restated in various forms within the goals and directives of the Department for Energy Security and Net Zero (DESNZ) and Ofgem. Within RIIO-ED2 business plans Distribution Network Operators (DNOs) have committed to increasing their understanding and ability to enable a just transition through a variety of actions. SSEN has committed to “develop mitigation strategies to ensure a net zero transition that benefits everyone” in the ED2 price control, and this project forms part of this work.

A key challenge is how to ensure that all consumers and communities have access to the range of products and services that enable decarbonisation in order to benefit from the enabling investments being made in electricity networks. This includes participating in flexibility markets either as an individual or in participation with others, and also includes access to energy efficiency solutions and also

includes opportunity to realise the benefits of electric vehicles, heat pumps and other LCTs.

The current offerings in these areas are not accessible to all consumers. For a fair and just transition, offerings accessible to all segments of society need to be developed. Barriers of access to capital, awareness, onboarding and mobilisation support, maintenance all need to be explored and understood in the context of societal segments more likely to be left behind in the energy transition and journey to net zero.

Method(s)

The project will undertake the following steps to achieve its aims:

• **Step 0: Define and mobilize the consortium ecosystem** – Define the cross-sector actors that will form part of the Equal LCT energy transition consortium, this includes social enterprises, housing associations, financial institutions [insurers and mortgage lenders], infrastructure developers and energy efficiency organizations.
• **Step 1: Understand the needs of different segments of society** – Use existing research and project partner experience to identify the segments of society that have existing support to take part in the energy transition versus those currently left behind.
• **Step 2: Understanding what flexibility benefits/opportunities different LCTs can offer per region and the current barriers to flexibility participation and investment** – Define which regions of SSEN's licence require different types of flexibility services, e.g. demand reduction, and what are the current commercial / technical barriers to flexibility market participation and investment incentives.
• **Step 3: Define the consumer archetypes** – By overlaying outputs of step 1 and step 2, define and agree a prioritized list of consumer segments to be targeted, by region and for which types of LCTs, to meet consumer and network needs.
• **Step 4: Define the consumer propositions and commercial models for the priority archetypes** – Develop the appropriate offering/model for each of them. Test and iterate the proposition and how to engage the consumers, test and refine the roles of stakeholders.
• **Step 5: Compile and design the trial** – Define Key Performance Indicators (KPIs) to measure success, the engagement plan for the trial partners and the plans for consumer recruitment.

Figure 1 demonstrates the method described above. This NIA project refers to Phase 1 only. The intention for this project is to apply for additional funding from the later stages of the SIF innovation funding stream, if the NIA project demonstrates that there is value in exploring this proposal in further detail.

Data Quality Statement (DQS): The project will be delivered under the NIA framework in line with OFGEM, ENA and SSEN internal policies. Data produced as part of this project will be subject to quality assurance to ensure that the information produced with each deliverable is accurate to the best of our knowledge and sources of information are appropriately documented. All deliverables and project outputs will be stored in our internal systems with appropriate backup and version management. Relevant project documentation and reports will also be made available on the ENA Smarter Networks Portal and dissemination material will be shared with the relevant stakeholders.

Measurement Quality Statement (MQS): The methodology used in this project will be subject to the supplier's own quality assurance regime and the source of data, measurement process and equipment as well as data processing will be clearly documented and verifiable. The measurements, designs and assessments will also be clearly documented in the relevant deliverables and final project report made available for review.

Scope

This project will identify and report the types of consumers being left behind in the energy transition as it relates to electricity networks. It will then analyse and document their related needs, and propose commercial products and services designed to enable their participation in a just energy transition.

Benefits:
Insights and learnings around:
• Which segments of society are likely to be left behind;
• How best to engage with them;
• What types of technologies and commercial products and services are most appropriate for which segment; and
• What commercial and technical barriers to flexibility market participation exist.

These insights and learnings will give product providers a greater understanding of the needs of these segments, and how to reach and engage them.

There will be further benefits, both to the consumer and to the network, brought about through the next phase of this project (Phase 2).

Objective(s)

This project aims to develop mitigation strategies to ensure a net zero transition which benefits everyone in the context of access to the enabling LCTs and flexible use of the electricity network. These will take the form of propositions for products and services which enable access to LCT and flexibility services to consumers who are being left behind in their adoption.

Objectives of the project:
1. Create consortium of relevant parties to drive changes in society to deliver just transition within the boundaries defined by the project.
2. Clearly define the wider value chain that is available to consumers once LCTs have been installed that would deliver value for consumers,
3. Clearly define the consumer archetypes that the project can deliver value for and prioritise these.
4. For the top priority consumer archetypes, develop appropriate models to allow them access to LCTs and access value from them.
5. Design a trial to test the technical and commercial viability of the chosen model(s), as well as measure its (/ their) success with consumers.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

Figure 2 Consumer Vulnerability Assessment Output

Success Criteria

This project will be considered a success if it delivers:
• A cohesive consortium of relevant parties that can guide and contribute to a project to deliver a just transition for electricity consumers.
• A fully developed trial plan incorporating KPIs to measure success, engagement plan for future project partners and a comprehensive plan for consumer engagement.

Project Partners and External Funding

Two project partners will support SSEN with the project; Baringa Partners and Centre for Sustainable Energy (CSE).

Baringa is a market leading energy consultancy with a specialist team working on commercial innovation for energy networks. They have considerable experience supporting DNOs to bring to market new flexibility products, and designing and delivering trials that includes work with SSEN, UK Power Networks (UKPN), Scottish Power Energy Networks (SPEN) and a number of networks in the US and Australia.

Baringa brings to Equal LCTs a tried and tested approach to assessing different commercial models' ability to meet the needs of energy consumers, energy networks and the likely sources of capital. Their recent work with Citizens Advice, assessing the benefits of options to deliver national scale energy efficiency interventions, provides an accelerator in targeting societal segments and identifying network needs. This, combined with Baringa's broader experience with banks, to develop pilot schemes to research, test and deliver "green homes" solutions, makes them uniquely positioned to support. Baringa's experience also provides immediate access to stakeholders identified as relevant in this project e.g. banks, Local Authorities, energy suppliers, flexibility providers, and bodies such as Citizens Advice and the Vulnerability Registration Service.

In addition, Baringa will also provide methodologies and tools to model regional network needs (for example, through their work with Citizens Advice) that are already in use across the DNOs: re-using these models means re-using existing best practice and producing rapid results.

CSE is an independent national charity formed in 1979. Their vision is a world where sustainability is second nature, carbon emissions have been cut to safe levels and fuel poverty has been replaced by energy justice. CSE share their knowledge and practical experience to empower people to change the way they think and act about energy. CSE supports people and organisations across the UK to tackle the climate emergency and end the suffering caused by cold homes.

CSE bring expertise in social research around energy use and patterns of consumption and demand. Through their Smart and Fair research programme they have developed insights and tools that help to assess emerging forms of vulnerability created through the low carbon transition, and have piloted advice and support interventions that can mitigate the risk of being left behind. They have produced domestic consumer archetypes for Ofgem and National Grid ESO's future energy scenarios that support distributional impacts analysis. Through their work on archetypes and associated spatial and temporal analytical techniques they are able to create cohesive and meaningful information from often disparate data sets. They have a deep understanding of the issues to be explored in Equal LCTs and will offer advice where required and insight into the aspects of a fair and equal transition that we are investigating.

Potential for New Learning

The project will identify the following:
• The barriers to greater enablement of LCT adoption for societal segments at risk of being left behind in the energy transition.
• Understanding of the needs of any LCT related proposition for different segments of society.
• Understanding of what flexibility benefits/opportunities different LCTs can offer in different network areas and the value of engaging new societal segments to realise those opportunities.
• A definition and quantification of benefits not previously realised by DNOs.
• The framework, principles and requirements of viable commercial propositions to enable increased LCT uptake and flexibility market access for the selected segments.

Scale of Project

This first phase of Equal LCTs is limited to nine months and will be an enabler for further stages.

In this NIA project we will be identifying a commercial model / models that would enable otherwise left behind consumers to benefits from the energy transition through access to LCTs and energy efficiencies. The findings that come out of this work (around consumer segmentation, barriers to entry into the flexibility market, LCT types and commercial models, and our high-level trial design) are intended to be shared widely with our stakeholder consortium and with all DNOs so that they, and in turn consumers, can benefits from our learnings.

This project will also create a high level trial design for how the commercial models identified in this project can be implemented as part of further projects

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL4 Bench Scale Research

Geographical Area

The project will take place within the SHEPD and SEPD licence areas.

Revenue Allowed for the RIIO Settlement

No revenue has been provided in the RIIO-ED2 allowance for this work.

Indicative Total NIA Project Expenditure

The total project expenditure is expected to be £532,125.

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 will be achieved through identifying viable commercial models that will unlock adoption of, and investment in, LCT assets. The project will increase and accelerate participation of those consumers, consumer groups and communities at risk of being left behind in the energy transition. Through access to flexible assets and / or services, the project has the potential to increase LCT uptake and LV flexibility as well as consumer market liquidity and maturity.

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

The specific focus of this project are social segments that are at risk of being left behind in the energy transition. This includes but is not limited to consumers in vulnerable situations. Please also refer to section 2.5 of this document.

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)

N/A

Please provide a calculation of the expected benefits the Solution

As this is a research project, the calculation of expected benefits is not required.

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

The problem addressed in this project is experienced by all electricity distribution networks, and has the potential to create positive benefits for all UK DNOs. At the point of registration, we have identified no barriers to replication across Great Britain, and this will be further tested during project execution.

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

The intention of the project is to identify how best to attract and maintain investment from private sector companies via replicable and sustainable commercial models. The longer-term costs of rolling out the project would be dependent on which commercial model is being developed, development of a consortia and coordination of interactions. These activities primarily sit within the market facilitation roles of the networks Distribution System Operator (DSO) function. The project will determine the full roll-out costs but they are expected to be small in comparison to the consumer and networks benefits.

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

This Phase 1 of Equal LCTs will focus on identifying viable commercial model(s), that will enable access to LCTs for left behind consumers, to be taken forward into a trial in Phase 2. Once the new commercial model has been trialled and approved in Phase 2, it will be possible for any other DNOs to use the learnings and insights from the trial itself, and from each phase of the project. The trial that will be proposed from this NIA project will have applicability and opportunity to deployed in multiple licence areas.

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.

There are no other NIA projects looking at developing models for third party investment in LCT roll out to facilitate a just transition.

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

This is the first project of this kind with the objective of enhancing a fair and just transition as:
• It is not only targeting vulnerable consumers, but those who have currently no help in place to access LCTs.
• This project will bring together networks services (providing flexibility where it's most needed) and new commercial offering for consumers

• The consortium is likely to encompass all the different type of stakeholders currently involved in a fair transition but also financial institutions, like banks as well as the government.
• There is currently no commercial model for consumers outside the “able to pay” segment. This model will require cross industry collaboration to solve.

The project will propose innovative ways for consumers that are currently left behind in the energy transition to be able to access offerings tailored to their needs, allowing them to access a type of low carbon technology such as a heat pump, where they would not be able to without these propositions.

Once the new commercial models have been trialled and approved, it will be possible to replicate the learnings and share with other UK DNOs. The learnings for financial institutions, and the wider energy system ecosystem could also be shared so that additional models can be developed.

Relevant Foreground IPR

N/A

Data Access Details

For information how to request data gathered in the course of this project, see Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) Data Sharing Procedure at https://ssen-innovation.co.uk/innovation-strategy/.

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

There is not yet sufficient clarity in relation to the products and services that a DNO would support the development of that will be specific to these market segments to support existing price control commitments and expectations linked to market facilitation, support for vulnerable consumers or whole system solutions.

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

DNOs have a duty to help to facilitate a just transition and this project aims to be one of a number of initiatives that will fulfil that duty. However, this project will not result in direct investment by DNOs. Instead, its aim is to produce a commercial model to allow investment in initiatives that allow the roll out of LCTs to’ hard to reach’ or ‘likely to be left behind’ consumer segments. This will be aligned with network needs and will help to create liquidity in the flexibility market that will allow DNOs to harness that flexibility to reduce future reinforcement requirements. Thus, Equal LCT will, firstly, directly benefit consumers by creating pathways for third party investment. It will secondly, benefit consumers by allowing entry to flexibility markets which will thirdly allow DNOs to defer future reinforcement reducing network costs.

This project has been approved by a senior member of staff

☑ Yes