

NIA Project Registration and PEA Document

Date of Submission

Jul 2026

Project Reference Number

NIA_SPEN_0139

Project Registration

Project Title

Flexibility Origination Module

Project Reference Number

NIA_SPEN_0139

Project Licensee(s)

SP Energy Networks Distribution

Project Start

July 2026

Project Duration

0 years and 9 months

Nominated Project Contact(s)

Parham Momeni

Project Budget

£246,260.00

Summary

This project will address a key gap for DNO/DSOs by improving visibility and understanding of flexibility across the network. It will develop and test a practical approach to forecasting when and where flexibility is likely to be available, both for real-time operations and future network planning. The project is focused on solving a system challenge, enabling better use of existing flexible demand and generation to support network operation and reduce costs. It will create clear and usable flexibility profiles (e.g. when assets are available, how they behave, and how they can respond), giving DNO/DSOs better insight to act with confidence. The project will also help unlock flexibility from customer groups that are underrepresented in the market (such as local authorities, SMEs, and commercial buildings).

Third Party Collaborators

ENQUIP Energy

Nominated Contact Email Address(es)

innovate@spenergynetworks.co.uk

Problem Being Solved

DNO/DSOs have limited visibility of the flexibility capacity held across their customer base. This is particularly true for segments like local authorities, SMEs, and commercial real estate, where there is a significant but largely untapped volume of flexibility. There is also a growing opportunity as flex markets evolve, with new sources of flexibility expected to emerge that are not yet fully visible or understood.

Unlocking this flexibility presents a strong opportunity for better network management; supporting constraint management, planned

outages, and ultimately helping reduce costs for customers. A more complete picture of customer flexibility (including type, location, availability, and operational behaviour) would significantly strengthen how DNO/DSOs operate.

At the same time, there is a clear opportunity on the customer side. Many potential flexibility providers — especially LAs, SMEs, and commercial real estate — are not yet fully engaged in flexibility markets. This is not due to lack of capability, but more a gap in awareness, tools, and clear value signals.

Method(s)

The preliminary phase of this project (FOMo PoC) will gather data on LCT assets, real estate assets, and flexibility markets. The project team will conduct interviews with a range of SPEN stakeholders to identify integration pathways with BAU systems. A key part of the project will be working closely with SPEN teams to ensure the approach aligns with existing systems and operational processes, so that outcomes can be realistically adopted and scaled. FOMo PoC will create a visual prototype of the Technical Concept to support the BAU integration pathways; and undertake an assessment of flex capacity potential in the Liverpool area.

Scope

FOMo will help DSOs to:

- Make more informed operational decisions during constraints and planned outages.
- Improve planning by understanding where flexibility can defer reinforcement.
- Send clearer signals to the market on when flexibility is needed and what it is worth.
- Support wider participation in flexibility markets.
- Improve reliability and resilience of the network.
- Enable greater uptake of low carbon technologies.
- Reduce network costs and, in turn, customer bills.

Objective(s)

The Objectives of FoMo are:

1. Create a technical concept visualisation to inform development of the FOMo Platform in a subsequent phase
2. Identify how FOMo Platform could ultimately integrate most effectively with BAU systems.
3. Assess potential consumer-led flex capacity in the Liverpool area.
4. Deliver IP2 and CBA documentation for a subsequent expanded PoC phase.

Consumer Vulnerability Impact Assessment

When applied by DSOs and prosumers the FOMo platform will materially improve the reliability of flexibility as a grid management and planning tool. This will support major technology transitions that are beneficial to all consumers in terms of reduced cost, cleaner air and improved quality of life:

- Electrification of vehicles (domestic, commercial and public).
- Electrification of heat (e.g. heat pumps, heat networks).
- Deployment of other LCTs such as solar PV and battery energy storage.

Success Criteria

- A robust technical concept that illustrates how the platform, when delivered, would provide the desired outcomes
- A clear pathway for secure integration with BAU systems.
- A robust methodology for assessing flexible capacity potential, which supports the development of the FOMo Platform.
- A compelling Cost Benefit Analysis for the FOMo platform, showing material benefit in terms of the potential of the platform to unlock flexible capacity for use in grid management.

Project Partners and External Funding

SPEN will collaborate with ENQUIP Energy (the trading name of Enquip Software Ltd.).

Potential for New Learning

The FOMo project is an opportunity for DSOs to learn about the operating profiles of prosumers connected to their networks, and how low carbon technology (LCT) assets already deployed, and new deployments, can be expected to provide flexible services.

The project team targets flex markets and local and national levels, which will provide a new opportunity to learn how flexibility service providers (FSPs) can be expected to interact with these different strata and types of flex market.

Scale of Project

This is a Proof of Concept project, which has the potential to unlock far greater value than the investment cost. These costs are expected to be in two main categories: deferred / avoided network reinforcement costs, and consequently reduced costs to consumers.

Technology Readiness at Start

TRL1 Basic Principles

Technology Readiness at End

TRL3 Proof of Concept

Geographical Area

The project will be centred on Liverpool in the SP Manweb license area. In addition, there may be a secondary focus on Glasgow in the SPD license area. The FOMo Platform, when complete, can be rolled out in any license area in the UK and internationally.

Revenue Allowed for the RIIO Settlement

0

Indicative Total NIA Project Expenditure

£246,260

Project Eligibility Assessment Part 1

Requirement 1

Facilitate the energy system transition and/or benefit consumers in vulnerable situations

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

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

FOMo will provide new consumption profiles and operating models for DNO/DSO customers, in particular data on flexible capacity potential and availability, on two timescales: 1) planning timescale (months to years) by identifying potential to increase / deploy new flexible capacity; and 2) operational timescale (days) by signalling the availability of existing flexible capacity. This will enable SPEN to plan system operation and network development with much more robust data on how these processes can be supported by flex.

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

n/a

Please provide a calculation and/or description of the expected benefits of the solution

As this will be a research project (TRL 1-3), this is not required.

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

While flex market design varies across DNO/DSO license areas and internationally, the FOMo software will be designed to be easily adjustable to local market design (e.g. alternative flexibility products, pricing, timescales), and so will be replicable across all DNO/DSO license areas

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

Once the software has been created for SPEN, there would be a cost to other DNO/DSOs to integrate the software in their existing systems. The cost of this integration will be established in the Feasibility Phase.

Requirement 3 / 1

Involve Research, Development or Demonstration

Projects 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

Involve Research, Development or Demonstration - Please select all that apply

- ☐ 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 FOMo PoC is designed to deliver learning in four strata, all of which are for the use of SPEN and potentially other electricity distribution licensees:

1. Quantitative data on operational parameters of flexible capacity (load and/or generation profiles, ramp rates, duration, operating patterns, etc.);
2. New approaches to quantifying availability of flex capacity in both operational and planning timeframes;
3. Understanding of alternative approaches to integrating the software with existing SPEN systems;
4. Approaches to transmitting data on flex resources, availability and potential from FSPs (DNO/DSO customers) to SPEN.

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. Networks must explicitly mention similar projects that they have considered and how these differ.

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

A full-horizon review of the literature and active R&D projects has revealed no other project working to establish functionality similar to FOMo. In addition, an exhaustive review of ENA Innovation Portal-listed projects has been carried out, which has revealed minimal duplication with other projects listed, as well as potential to build collaboratively on the findings of projects in adjacent work areas.

The software will be developed without off-the-shelf technology; all software including algorithms will be developed specifically for purpose. ESL will own all resulting software, which will be made available to SPEN and DNO/DSOs worldwide.

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

The FOMo Project is attempting to solve a newly emerging problem for DNO/DSOs: visibility of flexible capacity. No software exists that offers this capability to DNO/DSOs (who require flex) or to their customers (FSPs, who provide flex). The nearest market offers include flex trading platforms (e.g. Electron, Piclo, LocalFlex); flex aggregators (e.g. Flexitricity, Axle); and domestic optimisers (e.g. Kraken). None of these provides similar intelligence on flex availability to the DNO/DSO, however. Market platforms provide a location

for trading flex. Aggregators and optimisers simply sell flex from certain customer groups to DNO/DSOs; and focus solely on the short term, so provide no intelligence on how flex could support network planning in the longer term.

Relevant Foreground IPR

This Proof of Concept project will generate an illustrative Technical Concept, which will include potential integration pathways of the final FOMo Platform with BAU systems

Data Access Details

The SP Energy Networks Data Sharing Policy can be found [here](#).

Publicly available flex market data will be used, as well as detailed customer-side data, to be gathered through pre-existing agreements with Local Authority consumers. Any data generated during the course of this project will be handled in accordance with ESL's and SPEN's data management and sharing policies. Where possible, de-sensitised or anonymised data may be made available to interested parties upon request, subject to confidentiality, commercial sensitivity or data protection constraints.

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

The FOMO project is a unique, experimental project, which does not fall into the category of routine everyday operations related to running their network.

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 precise nature of existing SPEN systems needs to be properly researched (by ESL) to establish what constraint and/or opportunity they represent. This risk is being managed through early socialisation of the project within SPEN through interviews and workshops with key teams. Flex markets are young and prices are volatile, so benefits to potential flexibility service providers (FSP) are obscured, increasing the challenge of engaging with them for the purposes of carrying out the research, and gathering data. In addition, real estate energy data are usually poor quality, and dispersed. This risk area is managed through a five-year relationship between ESL and Liverpool City Council, from which much of the energy data will be acquired. The optimisation activity undertaken is subject to uncertainty, e.g. unanticipated technical difficulties may arise in creating optimisation algorithms.

This project has been approved by a senior member of staff

☒ Yes