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NIA Project Registration and PEA Document

Date of Submission

Jul 2025

Project Reference Number

NIA2_NGET0096

Project Registration

Project Title

Equity in Network Capacity through Education and Energy Support Solutions (EQUINET)

Project Reference Number

NIA2_NGET0096

Project Licensee(s)

National Grid Electricity Transmission

Project Start

August 2025

Project Duration

0 years and 8 months

Nominated Project Contact(s)

Kerri Hayes

Project Budget

£165,000.00

Summary

EQUINET aims to tackle inequality in energy network connections by enabling disadvantaged communities, smaller local authorities, and community-centric organisations to access capacity fairly and efficiently. The project combines network and demographic analysis, engagement strategies, policy recommendations, and digital tools to remove systemic barriers and support an inclusive energy transition.

Third Party Collaborators

Centre for Energy Equality

Nominated Contact Email Address(es)

box.NG.ETInnovation@nationalgrid.com

Problem Being Solved

- Disadvantaged communities face persistent barriers to accessing energy network connections, reinforcing systemic inequalities. Wealthier areas, large organisations, and energy-intensive industries often dominate available capacity at transmission and distribution scale, leaving poorer communities, local authorities, and the community energy sector unable to compete.
- These groups frequently lack the financial resources, technical expertise, and institutional capacity required to navigate complex and competitive connection processes.
- Regulatory reforms—such as Ofgem’s Targeted Charging Review and Access and Forward-Looking Charges Review—have not sufficiently addressed these disparities. As a result, vulnerable communities are excluded from adopting low-carbon technologies.
- Local authorities and grassroots organisations in under-resourced areas are often unsupported, delaying renewable energy

uptake and deepening social and economic divides.

- Without targeted solutions, these communities will continue to face high energy costs, reduced resilience, and missed opportunities to participate in and benefit from the energy transition—jeopardising the aims of the UK's Local Power Plan.

Method(s)

The project will address network access inequality by enabling disadvantaged communities, under-resourced local authorities, and the community sector to secure fair, timely, and affordable connections. The project uses demographic and network data to highlight where support is needed and provides Network Partners with the tools to act.

This approach tackles root causes of inequality by supporting vulnerable communities with:

- The information and guidance to navigate connection processes.
- Access to effective tools and technical support.
- Opportunities to benefit from electrification and increased resilience.
- And NGET and other Energy Networks will be equipped with the capability to identify and support disadvantaged communities, prioritise equitable access to network capacity, and make informed, data-driven decisions to deliver a fairer energy transition, targeting resources where they are most needed.

The project will consist of four key phases:

- Demographic and network analysis to identify priority areas for intervention.
- Digital tools and education strategies to equip communities and local partners.
- Policy and procedure review to recommend fairer connection practices and remove regulatory barriers.
- User-friendly digital systems to simplify application processes and improve access for disadvantaged groups.

Data Quality Statement (DQS):

- The project will be delivered under the NIA framework in line with OFGEM, ENA and NGGT / NGET internal policy. 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 on our internal sharepoint platform ensuring access control, 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 our supplier's own quality assurance regime. Quality assurance processes and the source of data, measurement processes and equipment as well as data processing will be clearly documented and verifiable. The measurements, designs and economic assessments will also be clearly documented in the relevant deliverables and final project report and will be made available for review.

In line with the ENA's ENIP document, the risk rating is scored 6 = Medium.

TRL Steps = 1 (2 TRL steps)

Cost = 2 (£165,000)

Suppliers = 1 (1 supplier)

Data Assumption = 2 (Assumptions known but will be defined within project)

Scope

The project focuses on addressing inequality in access to energy network connections by targeting disadvantaged communities, smaller local authorities, and the community energy sector. The project will analyse demographic and infrastructure data to identify

areas facing the greatest barriers, develop tailored education and engagement strategies, and propose fairer policies and procedures to ensure equitable access. It will also create two digital tools – a Targeted Support Tool for networks and a Digital Connection Platform – to simplify access to network availability. The project scope covers data analysis, stakeholder engagement, policy development, and prototype digital tool creation but excludes long-term commercial deployment or regulatory implementation beyond recommendations.

Objective(s)

- Identify and map areas with the greatest connectivity barriers using demographic and network data.
- Empower communities and local authorities with culturally relevant resources and engagement strategies.
- Review and recommend fairer, more inclusive policies and procedures for network connections.
- Develop and test digital tools to simplify access and guide underserved groups through the connection process.
- Support the wider energy transition by enabling equitable access to low-carbon technologies.

Consumer Vulnerability Impact Assessment

The project is specifically designed to benefit consumers in vulnerable situations by addressing systemic barriers to accessing energy network connections. The project will:

- Technical Impact: Improve accessibility to low-carbon technologies (e.g., heat pumps, EV charging, solar panels and also larger generation and demand assets at a regional scale) by simplifying connection processes and providing targeted digital tools.
- Financial Impact: Enable fairer access to affordable energy connections, helping vulnerable households and under-resourced communities avoid higher costs associated with delayed or inequitable access to capacity.
- Wellbeing Impact: Reduce fuel poverty and enhance resilience by empowering communities with the knowledge and resources needed to engage in the energy transition.

The project aims to reduce the distributional gap between well-resourced and disadvantaged communities, ensuring equitable opportunities to benefit from decarbonisation initiatives.

Success Criteria

Must (Essential):

Create ability to identify priority regions with significant connectivity barriers through combined demographic and network analysis.
Delivery of functional digital tools (Targeted Support Tool and Digital Connection Platform) tested with user groups.
Completion of a Policy and Procedure Recommendations Report and draft guidelines for fairer network connections.
Development and piloting of educational resources with community and local authority feedback.

Should/Could:

Engagement strategies validated with local authorities and/or community-centric organisations.
Policy recommendations acknowledged in regulatory or industry discussions

Project Partners and External Funding

Centre for Energy Equality (CEE) are the supplier.

Potential for New Learning

The project will deliver new learning on how demographic, social, and infrastructural factors intersect to create barriers in energy network connections, particularly for vulnerable communities. The project will provide insight into data-driven methods for identifying areas with the greatest connectivity challenges and demonstrate how tailored engagement and digital tools can improve access. It will also generate practical policy recommendations to embed equity within connection procedures. Learning will be shared through published reports, toolkits, webinars, and direct engagement with networks and community partners to ensure sector-wide adoption and impact.

Scale of Project

The project is an 8-month national-level project designed to address energy connection inequalities across Great Britain. While its analysis uses data covering the whole GB network, the project focuses on identifying and prioritising high-need regions where disadvantaged communities face the greatest barriers.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL4 Bench Scale Research

Geographical Area

EQUINET will operate across Great Britain, using national network and demographic data to identify areas with the highest connectivity barriers. While the analysis is GB-wide, specific focus will be placed on regions with significant concentrations of vulnerable consumers, under-resourced local authorities, and community energy groups.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

£148,500

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:

N/A

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

The project facilitates the energy system transition by making network connections more accessible to vulnerable communities that are often excluded due to resource and knowledge barriers. By providing data-driven insights, policy recommendations, and user-friendly digital tools, it enables NGET and the wider energy sector to proactively support fairer, faster, and more inclusive access to capacity. This helps ensure that disadvantaged groups can participate in electrification and decarbonisation efforts, improving resilience, reducing energy costs, and aligning with regulatory and social responsibility goals.

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

Exact financial figures are challenging to estimate at this stage but will be assessed during the project as part of the analysis and evaluation phases. Expected benefits include:

- Optimised network investment through improved targeting of capacity where it is most needed.
- Reduced costs for vulnerable consumers by enabling fairer and earlier access to low-carbon technologies (e.g., heat pumps, Evs and larger generation and demand assets at a regional scale).
- Avoidance of unnecessary reinforcement costs for network operators by improving planning and demand forecasting.
- Improved regulatory alignment and reputational benefits for network licensees.
- Social and wellbeing benefits by reducing fuel poverty and improving energy resilience in disadvantaged communities.

A high level estimate of combined societal and network benefits exceed £5–50 million over a regulatory period driven by avoided network reinforcement costs, more efficient allocation of new infrastructure, driving economic growth in disadvantaged communities and reduced duplication in planning. For vulnerable consumers, early access to low-carbon technologies could cut energy costs and unlock wider economic and social value, while networks benefit from improved forecasting, reduced upgrade requirements, and stronger regulatory alignment.

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

The EQUINET methodology is fully replicable across Great Britain and applicable to both distribution and transmission networks. It can be rolled out to all network licensee areas, with no site-specific limitations, as the approach is data-driven and scalable.

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

The full costs of rolling out EQUINET across Great Britain will be assessed during the project, alongside testing of the replicability of the model – though it is estimated to be relatively low given the potential societal and economic benefits. This assessment will consider factors such as tool refinement, integration with DNO and transmission business processes, national-level training, and stakeholder engagement. The project will develop a scalable rollout plan based on lessons learned from the pilot stages, ensuring that the solution can be effectively implemented across all network licensee areas while maximising value and efficiency.

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 learning generated by EQUINET will provide network licensees with practical insights into identifying and addressing connectivity barriers affecting vulnerable communities. Through the demographic and network analysis, licensees will gain data-driven methods to prioritise areas of need, helping to optimise investment and improve fairness in connection allocation.

The policy and procedural recommendations will guide network licensees in aligning their connection processes with regulatory expectations on equity and social responsibility. The digital tools—Targeted Support Tool and Digital Connection Platform—will offer scalable solutions that can be integrated into existing planning and customer service processes to improve efficiency and transparency.

Overall, the learning will support better decision-making, enhance stakeholder engagement, and enable licensees to deliver a more inclusive and customer-focused energy transition.

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.

NGET is unaware of similar projects being undertaken and as part of the NIA approval process no other networks have made us aware of projects that might result in duplication.

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

EQUINET is innovative because it directly addresses inequality in energy network connections—an area not currently tackled by existing tools or processes. Unlike standard network planning, EQUINET combines demographic, social, and infrastructure data with tailored community engagement and digital solutions to create a fairer energy transition. Its Targeted Support Tool and Digital Connection Platform represent first-of-kind approaches to simplifying and democratising access to network capacity, particularly for disadvantaged communities that are typically overlooked in current business practices. The methodology has not yet been tested at scale and involves new ways of working with community stakeholders, regulatory frameworks, and data-driven insights.

Relevant Foreground IPR

The project will generate new IPR, including digital tools, and knowledge and knowhow related to policy frameworks, and educational materials, which build on CEE's background expertise and data analysis methodologies required for their effective use.

Data Access Details

Data for this project and all other projects funded under the Network Innovation Allowance (NIA), Network Innovation Competition (NIC) or the new Strategic Innovation Fund (SIF) can be found or requested in a number of ways:

- A request for information via the Smarter Networks Portal at <https://smarter.energynetworks.org>, to contact select a project and click 'Contact Lead Network'. National Grid already publishes much of the data arising from our innovation projects here so you may wish to check this website before making an application.
- Via our Innovation website at <https://www.nationalgrid.com/uk/electricity-transmission/innovation>
- Via our managed mailbox box.NG.ETInnovation@nationalgrid.com

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

The project sits outside current business-as-usual (BAU) activities because it focuses on social equity and community engagement, which are not traditionally embedded in standard network investment or connection planning. Network licensees currently lack the tools, data frameworks, and methodologies required to systematically address these barriers. EQUINET introduces unproven, non-commercial digital tools and approaches that require testing and demonstration before they could be considered viable for BAU adoption.

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

NIA support is essential due to the project's innovative and exploratory nature. EQUINET involves development and testing of new methodologies and digital tools with uncertain outcomes, requiring collaborative engagement between multiple stakeholders (NGET, DNOs, community groups). The potential benefits are high but unproven, warranting a research and demonstration project. NIA funding enables this risk-managed approach, ensuring that solutions can be validated and refined before large-scale rollout, while generating learning and insights for the wider industry.

This project has been approved by a senior member of staff

Yes