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

Oct 2024

Project Reference Number

NIA_SPEN_0103

Project Registration

Project Title

Systems Thinking Approach to Innovation Management

Project Reference Number

NIA_SPEN_0103

Project Licensee(s)

SP Energy Networks Distribution

Project Start

July 2024

Project Duration

2 years and 1 month

Nominated Project Contact(s)

Andrew Woods

Project Budget

£250,000.00

Summary

This project seeks to develop an Innovation Management System approach to innovation management based on ISO 56000 series standards. We aim to adopt these principles to the energy networks sector through development of new methods, tools and processes that creates a more systematic approach to innovation – helping to ensure repeatable, successful outcomes.
Through a systems-thinking lens, we will advance networks understanding of our innovation ecosystem – focussing on expanding whole systems coordination through the expansion of our Open Innovation model developed in RIIO-1.

Preceding Projects

NIA_SPT_1505 - Trial of Open Innovation Model in the Utilities Sector

Nominated Contact Email Address(es)

innovate@spenergynetworks.co.uk

Problem Being Solved

Networks need to accelerate the pace at which they innovate in order to meet the demands of a Net Zero Power System and support the Energy System Transition. Barriers to efficient innovation investment include:

- Effective stakeholder engagement: Expanding the innovation ecosystem to ensure wide variety of stakeholder views are considered
- Wide network of innovators: Supporting a diverse range of partners to engage in network innovation
- Culture: Sustaining an innovation culture within an organisation
- Processes: Optimising project creation and internal governance processes to better support innovative solutions within network business

Method(s)

This project seeks to develop an Innovation Management System approach to innovation management based on ISO 56000 series standards. We aim to adopt these principles to the energy networks sector through development of new methods, tools and processes that creates a more systematic approach to innovation – helping to ensure repeatable, successful outcomes.

Through a systems-thinking lens, we will advance networks understanding of our innovation ecosystem – focussing on expanding whole systems coordination through the expansion of our Open Innovation model developed in RIIO-1.

1. Literature Review – developing an understanding of Innovation Management literature and IMS principles based on ISO 56000 standards and how they relate to energy networks innovation.
2. Leadership & Culture - Benchmark current maturity and develop an action plan for developing innovation culture within the organisation as part of an Innovation Management System.
3. Processes & Structures – Review of current innovation processes and opportunities to align with ISO 56000. Developing a clear view of the energy networks innovation ecosystem through research and demonstration of our Open Innovation model through new partnerships with local government and other sectors.
4. Support & Resources – Developing new methods and tools to enable effective innovation processes, knowledge transfer and portfolio management based on international standards and adapted for the unique, regulated energy networks environment.
5. Evaluation – Establishing the metrics, indicators and feedback processes for evaluating the performance of each of the management system elements. Developing a plan for sustaining and improving the developed system.

Scope

Through the adoption of a systematic approach to innovation, based on ISO 56000 series standards for innovation management, the project will develop new structures and processes for accelerating innovation. The aim is to broaden the energy networks innovation ecosystem – involving networks staff and third-party suppliers – whilst simplifying processes to ensure faster time to market. By developing an enhanced understanding of our innovation system and its component, we seek to identify new innovation opportunities, technologies and partners that can help us increase the pace of delivery according to our innovation strategy.

The scope of this NIA project is to review, develop and test a systems approach to innovation management within an energy networks context to improve innovation outcomes and demonstrate the replicability of this approach across UK LNOs.

The project will focus on key themes required for implementing an Innovation Management System:

- Fostering an innovation culture
- Strong leadership in innovation
- Efficient innovation planning
- Embedding innovation into business operations
- Adaptability
- Systems approach

At a high-level this project will be developed across the following stages:

1. Adapting the principles of systems-thinking and innovation management systems to the energy networks context.

- Review of existing SPEN/energy networks innovation processes and available literature.
- Engagement with our stakeholders to develop an understanding of requirements.
- Map out the specific user requirements and challenge areas to be addressed.

2. Development of methods and tools for managing innovation with a systems thinking approach.

- Develop an integrated framework for managing innovation as a system.
- Development of tools to support the developed framework.
- Consideration of how novel approaches will impact on current state.

3. Trial of developed approach to demonstrate and validate.

- Implementation and adoption of new processes and practices.
- Training users in any new methods and tools developed.
- Integrating and promoting the approach with business-as-usual teams.

4. Establishing a mechanism for continual evaluation and improvement of the developed system.

- Defining a method for monitoring the performance of the developed innovation system so that timely improvements can be

identified and implemented.

- Implementing the structures to sustain the approach beyond the innovation trial period.

Objective(s)

- Demonstrate replicable approaches for enhancing innovation culture within energy networks.
- Demonstrate ISO 56000 Innovation Management System principles applied to the needs of DNO/TOs and the GB electricity consumer.
- Identify and demonstrate process improvements.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

- The methods and solutions deployed in this project will not impact on consumers in vulnerable situation directly.
- It is expected they will benefit indirectly from the efficiency benefits that could be achieved in the innovation process that will allow us to deliver more targeted, consumer-centric innovation in shorter timeframes.

Success Criteria

- Improved innovation culture and understanding of innovation objectives, roles and responsibilities within the wider business – assessed via survey responses and compared with the current state as a benchmark.
- Reduce the time to develop innovation ideas into project delivery, benchmarked against current performance.
- Higher adoption rates for innovation initiatives seeking transition into business-as-usual operation.
- Increase number of innovation ideas received via Open Innovation.
- Increase the variety of project partners (by sector, scale) we work with

Project Partners and External Funding

N/A

Potential for New Learning

- Understanding of how an Innovation Management System approach, based on ISO standards, can be adopted for an energy network business.
- Improved understanding of the UK energy innovation ecosystem and appropriate opportunities for whole systems collaboration.
- As part of the development on an internal innovation culture and expanded Open Innovation model we expect that stakeholder engagement will play a key role in the development of this project, which will also act as a form of knowledge dissemination. In addition, knowledge dissemination via project progress and closedown reports will be supported by dissemination events and communications activities as appropriate.

Scale of Project

- Trialling this approach across the SP Energy Networks business, including our distribution and transmission licences will enable us to demonstrate the applicability of the method and solution for all other UK electricity operators.
- Improving innovation management requires broad engagement across a variety of sectors – the scale of this trial will allow us to include stakeholders from electricity transmission, distribution and across the whole energy system.

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL6 Large Scale

Geographical Area

SP Distribution, SP Transmission and SP Manweb licence areas.

Revenue Allowed for the RIIO Settlement

0

Indicative Total NIA Project Expenditure

£250,000

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:

The project has the potential to accelerate the energy system transition by achieving efficiencies in the Energy Networks Innovation Process through the adoption of internationally recognised standards for systematic innovation management which aim to streamline innovation and improve the outcomes and benefits from innovation initiatives.

Innovation is critical to achieving the Net Zero Power System by 2035 and without a step change in the pace of innovation this target is at risk. Demonstrating the applicability of systems-thinking principles and an expanded Open Innovation model in the energy network sector is critical in enabling this transformation.

This project will enable networks to reduce the time to develop innovation initiatives and provide an improved understanding of the innovation landscape in which we operate. The project will promote collaboration internal/external to network businesses to ensure that innovation challenges and opportunities are identified promptly.

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

Adoption of a systems-based approach to innovation and an expanded Open Innovation model will enable us to better understand and represent the needs of vulnerable consumers in our innovation initiatives. In a systems approach, we have the opportunity to embed considerations of vulnerable consumers more effectively and we would expect an indirect benefit for these consumers as a result.

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

Base Cost

Estimated time to develop an innovation proposal from idea to approved project is circa. 12 months

Method Cost

Through the development of a systems approach that streamlines innovation processes it is estimated that project development time can be reduced to 8 months.

Expected Benefits

Base Cost – Method Cost =

4 months reduction in time to develop an approved innovation project, contributing to a more consistent innovation pipeline and a faster time to market.

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

This method is replicable across all UK DNO/TOs and gas networks.

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

Roll-out costs will vary depending on the size of the network business.

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 project will demonstrate methods and tools that will allow Network Licensees to adopt systems thinking and Open Innovation as part of a holistic Innovation Management System.

As this project will be based on ISO 56000 standards, the outputs from this project will enable licensees to enhance their innovation regime and help them to embed internationally recognised best practices for innovation.

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.

This project will develop novel approaches for innovation management through the development of an Innovation Management System, following best practices, and demonstrating how the methods and solutions can be applied within UK LNOs.

This project seeks to build on the knowledge gained from SP Energy Networks' previous feasibility study on developing an Open Innovation model relevant to the industry and sector. This project will look to uplift the TRL through a demonstration of an expanded model as part of a broader project which aims to validate the use of systems-based approach to innovation management.

- Trial of Open Innovation Model in the Utilities Sector
- Open Innovation Phase 2

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

Where previous projects have established the feasibility of an Open Innovation model on a limited scale, this project will actively demonstrate how such models can be expanded and integrated with other models/components as part of a systems approach to innovation. In addition, this project is the first of its kind to consider how ISO 56000 Innovation Management standards can be applied within the regulated energy networks industry and will develop methods and tools that have potential for adoption for all UK LNOs – increasing the innovation capabilities of the whole sector.

Relevant Foreground IPR

N/A

Data Access Details

Access to this data must be requested by contacting SPInnovation@spenergynetworks.co.uk. Please provide the following information in your request:

- Affiliation, position and contact details of requesting party
- Relevant project and type of data required
- Reasons for requesting this data and evidence that this data will be used in the interest of the UK network electricity customers
- How data will be shared internally and externally by the requesting party

Any data request deemed unsuitable for sharing will be highlighted to the appropriate requesting party. After receiving the request we will provide the estimated date for completing the data provision based on other requests and our team workload at that time. All requested data remains the property of SP Energy Networks.

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

This project is developing new techniques and approaches for innovation management that are unproven in the energy networks sector and so an innovation-funded trial is required to test and validate these new approaches.

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

Adopting systems thinking approaches could have structural impacts on the way that network businesses currently approach innovation management and therefore there is the potential for disruption if this project was to be implemented as part of a BAU initiative. Through the NIA, this project will provide networks with a better understanding of how an innovation management system can operate (through literature review and live trials) within the unique regulated environment in which energy networks exist. This minimises the risk of disruption and sets the foundations for a broader rollout into BAU.

This project has been approved by a senior member of staff

☑ Yes