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

Jun 2014

Project Reference Number

SPT1006

Project Registration

Project Title

Smart Building Potential Within Heavily Utilised Networks

Project Reference Number

SPT1006

Project Licensee(s)

SP Energy Networks Transmission

Project Start

April 2014

Project Duration

1 year and 0 months

Nominated Project Contact(s)

SP Energy Networks Innovation

Project Budget

£425,000.00

Summary

his project will explore the benefits of 'Smart' buildings in heavily utilised City Centres with Glasgow City Council (GCC) who share the aspiration for a future 'Smart' grid to help reduce the City's carbon footprint from the anticipated adoption of a wide range of low carbon technologies. The project will take advantage of funding from the TSB future city project managed by GCC which will pay for all Communication and Data management systems to ensure a potential for legacy system. This project will be achieved through a dual approach.

1. Modelling current and future city centre energy infrastructure with a range of low carbon scenarios with relevant smart grid interventions applied. Scenarios will include: building energy efficiency improvements; penetration of distributed generation(DG) new electrical transport loads; and different options for building heating and cooling through heat pumps and CHP. This will include modelling on the impact of Demand Side Response and its potential use in supporting a range of network issues.

2. Demonstration of the feasibility and cost saving potential of Demand Side Response (DSR) interventions deployed in the buildings of a variety of GCC buildings. By establishing the levels of base and peak load reduction that can be realised through DSR installed retrospectively in a number of the City's public and office buildings, the use of DSR as a cost-effective tool to support the rollout of low-carbon technologies and the load growth they represent can be assessed against traditional reinforcement.

Nominated Contact Email Address(es)

SPInnovation@spenergynetworks.com

Problem Being Solved

Method(s)

Scope

Objective(s)

Key outcome will be the:

1. Development of a City centre network model where cost and impact of smart grid interventions can be assesed. Physical DSR interventions will complement the modelling by:
2. Gaining experience in the application of DSR measures to City Centre building stock;
3. Achieving measurable results to peak load reduction;
4. Understanding and quantifying the role DSR could play in cost-benefit analysis of future reinforcement;
5. Understanding the resource DSR may represent in terms of ancillary services to the network;
6. Integrating the use and monitoring of DSR into our systems. The net result for customers will be a potential increase in low carbon technologies that can be deployed on the network, without the need for future costly and potentially disruptive grid infrastructure reinforcements.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

n/a

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

n/a

Geographical Area

Revenue Allowed for the RIIO Settlement

Indicative Total NIA Project Expenditure

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:

n/a

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 (RIIO-1 projects only)

n/a

Please provide a calculation of the expected benefits the Solution

n/a

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

n/a

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

n/a

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

n/a

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

☐ Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

Is the default IPR position being applied?

☐ Yes

Please demonstrate how the learning from the project can be successfully disseminated to Network Licensees and other interested parties.

Please describe how many potential constraints or costs caused, or resulting from the imposed IPR arrangements.<

Please justify why the proposed IPR arrangements provide value for money for customers.

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.

n/a

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

n/a

Relevant Foreground IPR

n/a

Data Access Details

n/a

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

n/a

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

n/a

This project has been approved by a senior member of staff

☑ Yes