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 2012

Project Reference Number

SSET1004

Project Registration

Project Title

Demonstrating the Functionality of Automated Demand Response

Project Reference Number

SSET1004

Project Licensee(s)

Scottish and Southern Electricity Networks Distribution

Project Start

June 2011

Project Duration

1 year and 3 months

Nominated Project Contact(s)

SSEN Future Networks Team

Project Budget

£260,000.00

Summary

Honeywell Building Solutions Automated Demand Response (ADR) technology is in use in the USA and Asia to reduce load on the network at time of peak demand. This project will trial the above solution on a GB High Voltage/Low Voltage (HV/LV) network to ascertain whether it can effectively help manage the constraints network operators are likely to find as they move into a low carbon economy. However, before a DNO can use such technologies to manage the network, it is important to ensure that the communication and automated aggregation of the load shedding systems proposed have the functionality to produce the desired load reductions.

The electricity network in Bracknell and the wider Thames Valley area is typical of many urban and suburban areas in the GB: it serves a diverse mix of industrial, commercial and small business development.

As the area has developed, its electrical demand has increased and the demand profile has changed. Looking ahead, we expect that there will be increased demand associated with further economic development, along with demand rises linked to the anticipated increased penetration of Electric Vehicles, solar arrays and heat pumps.

Bracknell's primary transformers are already operating at close to capacity, which means they will not be able to accommodate further significant increases in electricity demand without being substantially upgraded. Furthermore, unless effectively managed, the anticipated changes in demand levels and load profiles will trigger network problems including voltage and thermal constraints. In order that Bracknell can continue to reliably supply electricity to it's customers, there is a need for a solution which safely, quickly and sustainably optimises the use of the available capacity on the network.

Nominated Contact Email Address(es)

fnp.pmo@sse.com

Problem Being Solved

Method(s)

Scope

Objective(s)

This small scale project aims to demonstrate that the ADR technology proposed can shed peak loads in the proposed buildings.

SEPD will run a pilot project of Honeywell's ADR solution to answer the following questions:

- Can the proposed ADR solution produce an aggregated figure of despatchable demand?
- Can it reduce/shift peak loads in facilities and therefore the network?
- What data can be collated and what value is it to a DNO and how will it be securely stored?

This project will demonstrate the feasibility of this solution and will provide valuable learning for all DNO's in GB. The learning from this trial may also feed into SEPD's New Thames Valley Vision Tier 2 LCNF submission.

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