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

Jul 2016

Project Reference Number

NIA_NGN_177

Project Registration

Project Title

Offtake Optimisation

Project Reference Number

NIA_NGN_177

Project Licensee(s)

Northern Gas Networks

Project Start

July 2016

Project Duration

0 years and 4 months

Nominated Project Contact(s)

Gareth Mills (Project Lead) & Tony Pearson (Project Manager)

Project Budget

£213,000.00

Summary

- The scope of the project is to use the skills, experience, approaches, methodologies and advanced modelling capabilities of NGN and KPMG / McLaren to examine the areas of challenge and opportunity outlined in the “Problem” section above for potential benefits.
- This area was identified as having the potential for further examination and development during the previous “scoping” project

Third Party Collaborators

KPMG

McLaren Alliance

Nominated Contact Email Address(es)

innovation@northerngas.co.uk

Problem Being Solved

The Offtake Capacity Statement (OCS) booking process whereby NGN books capacity at the various NTS offtakes is currently carried out offtake-by-offtake supported by a small level of manual iteration for areas where there is interaction between offtakes. Although this delivers a safe and secure set of capacity booking figures this is almost certain to be a sub-optimal combination.

Method(s)

- Capture findings, insights and opportunities from collaborative workshops, interviews and innovation stimulation events

- The methods used will draw on the capabilities of our partners (KPMG / McLaren Alliance) together with NGN's knowledge for optimisation using analytical tools and techniques.

Scope

- The scope of the project is to use the skills, experience, approaches, methodologies and advanced modelling capabilities of NGN and KPMG / McLaren to examine the areas of challenge and opportunity outlined in the "Problem" section above for potential benefits.
- This area was identified as having the potential for further examination and development during the previous "scoping" project

Objective(s)

The objectives of this project are to:-

- Develop a methodology to bring insight from multiple sources including Graphical Falcon (the network analysis tool used to model the Transmission Pipeline network) and expert knowledge in order to agree required capacities at NTS offtakes.
- Develop an initial assessment tool and methodology which utilise multiple inputs including system constraints and capabilities, system interactions, differential capacity charges, etc.
- Challenge and refine concepts as they are developed
- If a more complex solution is identified which could (in a way which is cost-effective) deliver further benefits, produce a high level implementation plan to show what key activities are required to further develop and deliver this

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The project will be deemed successful, if

- Hypotheses were generated, challenged and refined
- Feasibilities of these concepts, including risks and costs were developed
- NGN will be able to make an informed decision to proceed or not with developing and implementing new tool(s) and / or process(es) based on a robust business case supporting viable hypotheses

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

9 week project focused on optimizing asset investment and management decisions applicable to booking of offtake capacities

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL7 Inactive Commissioning

Geographical Area

NGN wide

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

External £160k. Internal £53k

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)

For NGN the gross saving is estimated to be in the range of £80k - £750k

Please provide a calculation of the expected benefits the Solution

The estimated expected financial savings are based on an assessment of the currently booked capacity costs compared with what might reasonably be delivered based on unconstrained bookings.

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

Applicable across all network Licensees

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

Should a straightforward methodology for optimization be identified as part of this project then it is anticipated that the approach could be adopted by other GDNs at minimal cost.

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 challenges faced by NGN in this area are industry-wide, therefore any methods, insight and learning from developing better analytical modelling techniques are likely to be applicable for other Network Licensees.

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

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