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

Sep 2013

Project Reference Number

NIA_WWU_001

Project Registration

Project Title

Diurnal Storage (Phase 2)

Project Reference Number

NIA_WWU_001

Project Licensee(s)

Cadent

Project Start

February 2013

Project Duration

1 year and 3 months

Nominated Project Contact(s)

Bethan Winter and Martyn Pallant

Project Budget

£396,940.00

Summary

The scope of this project is to continue the work of Phase 1, incorporating the following deliverables:

1. To record Detailed user Requirements from all Distribution Networks for the application
2. Design Phase (showing storyboard/screenshots)
3. Stage 2 Model Delivery Software Application
4. Report describing development of the Stage 2 Model Delivery

Nominated Contact Email Address(es)

Innovation@cadentgas.com

Problem Being Solved

To understand factors that influence the storage requirements, aiding a Gas Distribution Network to make efficient investments or flex bookings and demonstrate regulatory compliance. On any supply day the DNCC has to ensure that sufficient storage is available to meet the customer requirements, taking account of any forecast errors and minimising the storage take from the National Transmission System.

Method(s)

This project will potentially have a 2 stage approach. Firstly with the development of an application that will form the basis of providing a better analysis tool. This will in turn provide a good foundation on which to conduct more innovation in a future project stage.

Scope

The scope of this project is to continue the work of Phase 1, incorporating the following deliverables:

1. To record Detailed user Requirements from all Distribution Networks for the application
2. Design Phase (showing storyboard/screenshots)
3. Stage 2 Model Delivery Software Application
4. Report describing development of the Stage 2 Model Delivery

Objective(s)

The project objective is to build, test and support implementation of a system that applies new modeling techniques and methodologies for predicting diurnal storage needs for a GDN to support both investment and operational planning activities.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

A more robust and, crucially, defensible storage estimation model that can be used to:

1. Predict the 1:20 storage requirement
2. Predict the likely storage requirement away from ‘peak’
3. Allow GDN’s to investigate in more detail, factors that affect/influence the diurnal storage requirements.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

Phase 1 of the project was funded and completed successfully and it has enabled the specification of the requirements for this Phase 2 element to be determined.

It is anticipated that it will deliver a diurnal modeling application that provides enhance SSM modeling functionality and additional statistical processing of results within a flexible modeling platform. A 3rd phase may be considered to include functional enhancements & new models (to be defined) that would extend the modeling capabilities delivered in phase 2.

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

UK mainland

Revenue Allowed for the RIIO Settlement

No revenue allowance under RIIO settlement

Indicative Total NIA Project Expenditure

NGG

- £30,568 IFI project expenditure

- £84,123 NIA project expenditure
- £114,691 total project expenditure

WWU

- £59,644 IFI project expenditure
- £55,000 NIA project expenditure
- £114,644 total project expenditure

NGN

- £0 IFI project expenditure
- £68,750 NIA project expenditure
- £68,750 total project expenditure

SGN

- £25,522 IFI project expenditure
- £73,333 NIA project expenditure
- £98,855 total project expenditure

TOTAL

- £115,734 IFI project expenditure
- £281,206 NIA project expenditure
- £396,940 total 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)

No real saving, the project outputs will be around reliability (Network Capacity) and safety (a level of risk removed). Given the capital and operating spend that can be generated (or saved) through a robust method of determining the storage requirement.

Please provide a calculation of the expected benefits the Solution

Not required - Research and development project.

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

This method could be applied across the whole of GB to small diameter pipes within the gas industry.

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

None

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

Learning from the study will benefit all participating Networks to manage the storage requirements through the improved platform of the SSM software.

Or, please describe what specific challenge identified in the Network Licensee's innovation strategy that is being addressed by the project (RIIO-1 only)

Not applicable – learning can be applied by all Network Licensees therefore please refer to i) above.

☑ 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