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 2016

Project Reference Number

NIA_NGGT0099

Project Registration

Project Title

Gas Transmission Network Output Methodology Analytics

Project Reference Number

NIA_NGGT0099

Project Licensee(s)

National Gas Transmission PLC

Project Start

August 2016

Project Duration

1 year and 1 month

Nominated Project Contact(s)

Tony Nixon, box.GT.innovation@nationalgrid.com

Project Budget

£115,000.00

Summary

The current approach relies on a system which is specific to each asset group (of which there are five primary asset categories and 47 secondary asset categories). However the proposed approach will develop an asset management methodology based on converting multiple and varied risks associated with NGGT assets into a monetised value. The model will have to consider a range of variables including investment options, budget constraints, financial return and risk profile. The potential impact of any investment decision will assess failure, consequence and financial cost. The new approach will need to allow for a rapid analysis of multiple scenarios. Improved investment decisions will result in an efficient, effective and consistent approach to asset management at a known and managed level of risk.

Preceding Projects

NIA_NGGT0055 - Above Ground Installation Integrity Decision Support Tool

Third Party Collaborators

ICS Analytics

Nominated Contact Email Address(es)

Box.GT.Innovation@nationalgrid.com

Problem Being Solved

National Grid Gas Transmission (NGGT) is looking to develop a new approach to managing asset maintenance and replacement. The approach known as Monetised Risk will allow NGGT to identify the commercial value in delivering its investment programmes and interventions to all relevant stakeholders and trade between investment options accordingly.

Across all electricity network operators and gas distribution operators significant progress has been made to develop new methodologies that will allow the asset health of their networks to be described with the use of a financial value. NGGT intends to research the various approaches, pilot the methodology on two assets either primary or secondary and develop a plan to develop a suitable methodology across all NTS assets. The nature of the NTS assets and operations means that certain risk elements have to be approached in a unique way and certain asset categories are particularly complex and could exhibit a number of different failure modes.

Method(s)

The project looks to research and evaluate the suitability of the financial risk value methodologies; initially reviewing the range of approaches to risk across utilities. These evaluations will assess the suitability of the methodology to determine the financial risk values across the NGGT asset base and identify the necessary data to support a consistent reporting approach to Ofgem and Stakeholders. The project will then pilot a suitable methodology on two primary or secondary assets and run several scenarios under each. The project then looks to assess and plan requirements to implement changes to the NGGT current methodology based on prioritisation of the asset groups.

Scope

The current approach relies on a system which is specific to each asset group (of which there are five primary asset categories and 47 secondary asset categories). However the proposed approach will develop an asset management methodology based on converting multiple and varied risks associated with NGGT assets into a monetised value. The model will have to consider a range of variables including investment options, budget constraints, financial return and risk profile. The potential impact of any investment decision will assess failure, consequence and financial cost. The new approach will need to allow for a rapid analysis of multiple scenarios. Improved investment decisions will result in an efficient, effective and consistent approach to asset management at a known and managed level of risk.

Objective(s)

The project objective is to pilot and select a monetised risk model (s) for trial on several asset categories.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

1. Complete research and pilot of a suitable methodology on two asset types.
2. Produce plan for the implementation new methodology.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

The project is a desk based assessment and development such that it can be used in the working environment.

Technology Readiness at Start

TRL3 Proof of Concept

Technology Readiness at End

TRL6 Large Scale

Geographical Area

This programme will be conducted by NGGT and its suppliers with the methodology being confined to UK National Transmission System asset groups only.

Revenue Allowed for the RIIO Settlement

None

Indicative Total NIA Project Expenditure

£115,000

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:

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)

Investment in NTS asset health over the RIIO T1 period is ~£500m. The use of a monetised risk methodology will assist in articulating and justifying the need for that investment to all relevant stakeholders. The outcome of the project should allow NGGT to articulate the financial value of the risk removed and the investment incurred to remove that risk.

Please provide a calculation of the expected benefits the Solution

N/A research project

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

It is estimated that this process will be applicable to all Gas Transmission assets across GB.

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

The methodology will be employed by NGGT for all its on-going asset investment and reporting processes. It is assumed that adopting this new methodology will require infomation systems (IS) access at a cost of circa £250,000 per annum and additional resources to utilize the tools at an estimated £170,000 per annum. Our assumption is that the financial benefit that can be derived from this methodology will exceed the cost to support the ongoing use and maintenance of the new methodology.

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)

The programme will contribute to National Grid's reliability innovation objective.

☑ 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