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NIA Project Registration and PEA Document

Date of Submission

Feb 2018

Project Reference Number

NIA_NGN_224

Project Registration

Project Title

Safety & Operational Framework for the Temporary Provision of Alternative Natural Gas Systems (SOFTPANG)

Project Reference Number

NIA_NGN_224

Project Licensee(s)

Northern Gas Networks

Project Start

February 2018

Project Duration

1 year and 1 month

Nominated Project Contact(s)

Wayne Smith

Project Budget

£83,067.00

Summary

Project Deliverables

A legal and commercial framework initially accepted by the regulator and shippers.

A safety management framework and decision guidance tool.

A recommendations report, enabling a future project to field trial the methodology.

Third Party Collaborators

MMI Engineering Ltd

Nominated Contact Email Address(es)

innovation@northerngas.co.uk

Problem Being Solved

Gas Distribution Network (GDN) operators are responsible for the transportation of natural gas from suppliers to consumers within England and Wales. The GDN's are required to provide quality of service to gas customers both in terms of gas quality and continuity of supply. Any un-planned or planned interruption in gas supply can adversely affect the quality of service, and cause disruption to both domestic and commercial customers.

Vulnerable customers such as the young, elderly, care home occupants, customers with hearing and/or visual impairments and those with identified long-term health issues can be particularly impacted by supply interruption. In addition, the interruption of gas supplies can throw additional significant loads onto the electricity networks as customers switch to electricity as the source of energy for their heating and cooking needs. These loads, and the negative impact on customers can be particularly severe during winter.

Other issues encountered during and after supply interruptions include the need to purge the gas system and enter premises to relight pilots on appliances, provision of customer care operatives at the site of the interruption and the supply of electrical hot plates for cooking and portable heaters for heating of customer premises. In addition, in accordance with primary legislation and transporter licenses networks have to pay compensation to customers following interruptions.

Method(s)

Develop a Safety & Operational Framework for the Temporary Provision of Alternative Natural Gas Systems (SOFTPANG), in order to minimise and/or avoid gas supply interruptions. The project will seek regulatory support, whilst enabling a future project for field trialling the frameworks methodology and specific gas supply technologies.

Scope

- The development and production of a legal and commercial framework, a suite of requirements / standards, systems and processes, capable of enabling NGN to use new and existing temporary gas supply technologies within its network.
- Initial Key Stakeholder agreement of the legal and commercial framework.

Duration Extension

The project has progressed significantly and is considered to be in the later stages of completion. However, the complexity of the work to understand the feasibility landscape of temporary gas supply technologies has meant the project has previously overrun and a project extension applied. The research element of the project is now considered complete.

Further adding to the complexity is the specific reporting format in which NGN require the research feasibility report to be presented in. It has since been identified further work is required by the supplier to satisfy NGN's original project requirements. Although the significance of the work outstanding is considered to be low, it is a timely activity.

Objective(s)

Stage 1 Objectives Overview

- Review of the legal, commercial, licencing and regulatory requirements related to the temporary use of portable natural gas storage
- Documented robust evidence to gain initial support and agreement for the use of temporary gas / storage technologies from the regulator and shippers.

Stage 2 Objectives Overview

- Review of the range of available and new technologies to provide a temporary gas supply.
- Understand the risks, capabilities and limitations of each type of temporary gas storage / supply technology, allowing for scenario based decision making.
- Identify the training requirement for each type of temporary gas storage / supply technology.
- Documented robust data to inform a CBA of implementing gas storage / supply technologies within the network.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

- Identified Temporary gas supply options specific to the following scenarios:
 - o Single customer – planned maintenance
 - o Multiple customers planned and emergency
 - o Large incidents
 - o One off situation care homes etc
- A legal and commercial framework that would allow the temporary use of portable natural gas supply,
- A safety management framework and decision guidance tool
- Documented Training requirements specification
- A recommendations report, enabling a future project to field trial the methodology

Project Partners and External Funding

MMI Engineering Ltd.

Potential for New Learning

The learning primarily will come from how commercial and technical constraints can be overcome to introduce a new technical innovative solution. The project will also assist in understanding interaction required among GDNs, gas suppliers and regulators to develop and implement innovative ideas to improve quality of service to the end customer.

Scale of Project

The focus of the project is research and feasibility. The output of which has the potential to shape GB's gas industries view and acceptance for utilising temporary gas supplies to avoid customer supply interruption.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL4 Bench Scale Research

Geographical Area

The project is applicable to GB's Gas Distribution Networks.

Revenue Allowed for the RII Settlement

Not applicable

Indicative Total NIA Project Expenditure

NGN External expenditure - £62,300

NGN Internal expenditure - £20,767

Total NGN expenditure - £83,067

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)

The project, if successful will enable a future project that is anticipated to deliver both monetised and perceived value driven benefits. The project will capture robust data to allow a CBA to be carried out.

Please provide a calculation of the expected benefits the Solution

N/A

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

The project output is anticipated to inform GB's Gas Distribution Industry. If successful it will deliver a framework which each GDN could tailor, adopt and utilise for their benefit.

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

The project output is anticipated to inform GB's Gas Distribution Industry, in the form of a legal and commercial framework. The framework can be utilised by other GDN's at no additional cost, but there may be elements of the framework which require individual tailoring at the GDN's expense.

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 project output is anticipated to inform GB's Gas Distribution Industry's view and gain its acceptance for adopting the use of temporary gas supplies, in times of gas service interruption.

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

Customer Service – The project seeks to continually improve Northern Gas Networks customer experience, through enabling the use of temporary gas supplies (when the distribution network is unavailable). The use of which, is intended to reduce the number of occurrences of planned 'service' interruptions and shorten the interruption time for unplanned works. Additionally, the effects are anticipated to minimise the exposure to gas service interruptions to its vulnerable customers.

- 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.

A thorough technology search and review of the Smarter Networks Portal has been undertaken. Previous similar projects have been identified and scrutinised for duplication.

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

The research and feasibility of introducing temporary gas supply technologies to avoid customer interruption, does not currently exist. To allow such use of technologies the legal and commercial criteria must be first understand, before seeking regulatory agreement. .

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

The project would not be commercially viable, due to its low TRL level and the uncertainty of obtaining regulatory agreement. The latter is needed for the project to deliver its intended benefits.

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

The project would not be commercially viable, due to its low TRL level and the uncertainty of obtaining regulatory agreement. The latter is needed for the project to deliver its intended benefits.

This project has been approved by a senior member of staff

Yes