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

Oct 2018

Project Reference Number

NIA_NGN_231

Project Registration

Project Title

Temporary provision for Hot Water

Project Reference Number

NIA_NGN_231

Project Licensee(s)

Northern Gas Networks

Project Start

October 2018

Project Duration

0 years and 7 months

Nominated Project Contact(s)

Steve Dacre

Project Budget

£87,000.00

Summary

It's not always possible for Northern Gas Networks to maintain a continual gas supply to its customers. There are unavoidable times where essential network maintenance, disconnections and upgrade works must take place to ensure the continued reliability and performance of the network. Throughout these times, vulnerable customers could potentially be left without gas.

Whilst NGN provide additional welfare to its vulnerable customers in times of service interruption, this is specifically focused around cooking and heating.

However, (through independent research), NGN's customers have identified a 'need' to be supported further with hot water provisions. Whilst this is not a regulatory requirement, vulnerable customers without access to hot water are likely to have their 'daily routine' impacted upon.

The effects of not having access to hot water could potentially impact on the:

- Customers who are medically dependent on hot water.
- Health of NGN's vulnerable customers.
- Routine of those customers with young children.
- Personal hygiene of customers and therefore their daily routine.
- Number of customer complaints.
- Number of financial claims.
- Customer's perspective of NGN's social responsibility commitments.

Nominated Contact Email Address(es)

innovation@northerngas.co.uk

Problem Being Solved

It's not always possible for Northern Gas Networks to maintain a continual gas supply to its customers. There are unavoidable times where essential network maintenance, disconnections and upgrade works must take place to ensure the continued reliability and performance of the network. Throughout these times, vulnerable customers could potentially be left without gas.

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Method(s)

The project is centric to research, firstly in identifying and proving the feasibility of products suitable for delivering a temporary hot water supply and secondly, the feasibility of its application within the gas network.
Achieved by researching and developing:

• A framework of technologies by which temporary hot water can be offered in the event of a gas supply interruption, and identify the range of scenarios for which the solution is applicable.

• A decision support tool, the basis for identifying the safest, most effective solution to deliver a requirement for hot water provision in the event of a gas supply interruption, taking due account of the financial and environmental implications to the network and its customers.

Scope

In Scope

• Research to identify the most efficient and effective products for the delivery of temporary hot water (or alternative measures).
• Research to identify associated risks with the product. For example, constraining of the electricity network, risks to the customer.
• Identification of the most efficient way to maintain / service the equipment. For example, PAT testing.
• Identification of the whole life cycle cost of the product.
• Identification of the most effective way to deliver, recuperate and or dispose of the product.
• Incorporate existing welfare solutions (heaters and hot plates) into the decision support tool.

Out of Scope

• Field trials and procurement of welfare solutions - It is envisaged on successful completion of the project, NGN will carry out small scale field trials to validate the research before moving to a procurement event.

Objective(s)

Project aim:

To deliver an asset management tool for the optimised selection and delivery of researched (evaluated) temporary hot water supply solutions (or alternative measures), suitable for use in typical gas supply interruption scenarios. The focus of which is placed on vulnerable customers.

Project objectives:

• Identify and asses 'practically feasible' temporary hot water supply products (or alternative measures) for use in typical gas supply interruption scenarios. Delivered in the form of a technical note.

• Develop an informed outlook of the lifecycle management of temporary hot water supply products (or alternative measures). Delivered in the form of a framework document.

• Develop a decision support tool for the optimised selection of customer 'welfare provisions', (incorporating exiting and newly identified solutions). Delivered in the form of an 'input driven'generated 'output' tool.

Note – The term 'practically feasible' refers to the application of the identified product, evaluated against a multi–criteria to assess its use on the gas network.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The success of the project will measured on the following outcomes:

• Identification of one or more ‘practically feasible’ technologies by which temporary hot water can be offered in the event of a gas supply interruption, and the range of scenarios for which the solution is applicable.

• Development and NGN acceptance of a pragmatic decision-making basis for identifying the safest, most effective solution to deliver a requirement for hot water provision in the event of gas outage, taking due account of the financial and environmental implications.

Project Partners and External Funding

MMI Engineering Ltd.

Potential for New Learning

The project will allow the Gas Distribution Network’s (GDN’s) to identify and understand the feasibility of providing the ‘customer’ with a temporary hot water solution, in times of gas supply interruption. Once the research and feasibility is understood, the networks can take an informed view of the ‘overall’ benefits it affords, potentially shaping the welfare arrangements GDN’s offer in times of gas supply interruptions.

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 of adopting temporary hot water solutions as part of its customer welfare contingency in times of gas supply interruptions.

Technology Readiness at Start

TRL3 Proof of Concept

Technology Readiness at End

TRL4 Bench Scale Research

Geographical Area

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

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

NGN External expenditure - £65,500
NGN Internal expenditure - £ 21,500
Total NGN expenditure - £ 87,000

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)

As well as potentially delivering continuity of customers daily routine in times of 'gas service' interruption, which the customer will benefit 'real time'. There is also a potential financial saving in the form of customer complaint payments and costs associated with providing additional welfare, such as hotels etc.

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.

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

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 will allow the Gas Distribution Network's (GDN's) to identify and understand the feasibility of providing the 'customer' with a temporary hot water solution, in times of gas supply interruption. Once the research and feasibility is understood, the networks can take an informed view of the 'overall' benefits it affords, potentially shaping the welfare arrangements GDN's offer in times of gas supply interruptions.

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 hot water provisions for its 'customers' (when the distribution network is unavailable). The use of which, is intended to reduce the impact a gas supply interruption has on its vulnerable customers and improve the 'overall' customer service offering afforded by the network.

☑ 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 and the project has been shared with the Gas Innovation Governance Group to highlight any possible 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 hot water provisions into the gas network (at times of gas service interruption), does not currently exist. The Technology Readiness Levels of temporary hot water solutions for the end user (customer) remains largely unknown, along with the feasibility of its application in the gas network. The project is driven by the 'customer', who have identified a need for temporary hot water provisions in the time of gas supply interruptions as part of active stakeholder engagement surveys conducted by NGN.

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

Due to the low TRL of the project, there is a degree of uncertainty surrounding the outcome of the project. Therefore, the project would present a risk beyond the businesses appetite.

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

Due to the uncertainty surrounding the project outcome, the project is considered a commercial risk that is not central to the core operational model of the business at this time.

This project has been approved by a senior member of staff

☑ Yes