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

Dec 2016

Project Reference Number

NIA_NGN_188

Project Registration

Project Title

Digital Pressure Test Alert

Project Reference Number

NIA_NGN_188

Project Licensee(s)

Northern Gas Networks

Project Start

December 2016

Project Duration

1 year and 1 month

Nominated Project Contact(s)

Chris Green CGreen@northerngas.co.uk

Project Budget

£67,333.00

Summary

The proposal should accommodate 6 prototype pressure equipment kits and associated app and web based software ready for a 3 month trial deployment.

Northern Gas Networks has a long term partnership arrangement with ControlPoint LLP (see www.controlpoint.co.uk) a technically oriented business which supports utilities and contractors to improve the long term performance of their assets by eliminating poor installation on their pipelines.

There are several advantages of employing the ControlPoint system, however the primary advantage relative to this project proposal is the simplicity and speed of data capture, expert assessment and subsequent communication to allow management intervention and decision making.

It is not uncommon for pipe jointing information to be captured, communicated, assessed and any resulting alert fed back to the decision makers in the utility business within 10 minutes. Operational and technical decisions are therefore facilitated and asset integrity assured.

Third Party Collaborators

Control Point

Nominated Contact Email Address(es)

innovation@northerngas.co.uk

Problem Being Solved

The problem relates to the capture of the pressure test data and the real-time use of that data within the business to inform both

operational and technical departments.

Historically the data is either not captured at all or the time for it to be received back to the GDN operator is too long for any appropriate operational use of technical intervention.

The current practice for low pressure (<75mBar) testing of PE mains and services includes a 100mbar/5 minute test for gas service connections using a manometer and a 350mbar/short duration test using a pressure test logger for mains renewal.

Method(s)

NGN will work in partnership with ControlPoint to develop a prototype system using wherever possible existing proprietary equipment and software.The basic function of the system should include the following attributes

- Simple to use pressure test equipment for both 100 & 350mbar application
- Wireless connectivity of the pressure test equipment to a smartphone
- A smartphone app to control the pressure test process and send data real-time to a web based asset management platfor
- An ability to alert interested parties to all key attributes from a given test result i.e. test type, location, pass/fail status, timing, etc.

Scope

The proposal should accommodate 6 prototype pressure equipment kits and associated app and web based software ready for a 3 month trial deployment.

Northern Gas Networks has a long term partnership arrangement with ControlPoint LLP (see www.controlpoint.co.uk) a technically oriented business which supports utilities and contractors to improve the long term performance of their assets by eliminating poor installation on their pipelines.

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Objective(s)

- Ability to alert key events post pressure test – operational and technical
- Improved pressure test records
- Improved DSP accountability for transferring correctly tested assets – reduced asset risk
- No major productivity implications for installers
- Improved visibility for planning and deployment of associated activities i.e. purge and relight
- Cost benefit as a result of reduction in revisits to sites to undertake remedial work to remediate poor installations
- Ability to adapt app/alert system to other pressure test hardware – device agnostic

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The project will be deemed a success if the following criteria are met:

- Ability to alert key events post pressure test – operational and technical
- Improved pressure test records
- Improved DSP accountability for transferring correctly tested assets – reduced asset risk
- No major productivity implications for installers
- Improved visibility for planning and deployment of associated activities i.e. purge and relight
- Cost benefit as a result of reduction in revisits to sites to undertake remedial work to remediate poor installations

- Ability to adapt app/alert system to other pressure test hardware – device agnostic

Project Partners and External Funding

This project is completley funded by NIA finanace

Northern Gas Networks

ControlPoint

Potential for New Learning

The real time notification of pressure test results from site to back office support functions enable early indentation of operational progress from site. The use of technology for this information transfer enables a move away from conventional communication methods.

Scale of Project

The project will be undertaken by 6 DSP teams working in the Northern Gas Networks region. The teams undertaking the trial will be familiar with ControlPoint systems and have active accounts on Joint Manager as a result of the NGN PE Asset Health strategy.

The project would include desktop research, a review of scope, design and development followed by field trials. Upon completion of these activities a technical report will be produced.

Technology Readiness at Start

TRL5 Pilot Scale

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

Northern Gas Networks network.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

NGN External expenditure - £ 50,500

NGN Internal expenditure - £16,833

Total NGN expenditure - £67,333

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)

There are a number of qualative benefits that this proposal offers, a primary benefit is the ability to send both positive and negative alerts to management to enable timely intervention. The alert process is an automated quality assurance mechanism that also has spin off benefits. The transfer of data to allow quality assurance inspection unlocks potential for the use of that data for operational progress reports, pressure test certificates etc. thus removing the need for existing Labour intensive information transfer.

Please provide a calculation of the expected benefits the Solution

Current cost:

Total resource cost per hour	Hr	Teams	Network cost per week	Weeks	Network costs per annum.
£43	1.25	150	£8063	48	£387,000

The automatic transfer of data and alert mechanism will remove the need for the resource cost.

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

£387,000 x 8 GDN's = £3,096,000 per annum

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

This will be subject to each individual network licensee's strategy. A digital pressure test gauge per team and electronic transfer capability is required.

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 pressure test alert system could be used by all network licensee's, every main and service that is installed requires a pressure test.

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 real time notification of pressure test results from site to back office support functions enable appropriate action to be taken without the need for human intervention for all instances. The requirement for action to be taken can be by exception to allow greater impact and efficiency.

☑ 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 check of the ENA Smarter Networks Portal has been carried.

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