

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

Aug 2016

### Project Reference Number

NIA\_NGN\_171

## Project Registration

### Project Title

Digital MPRS Solution

### Project Reference Number

NIA\_NGN\_171

### Project Licensee(s)

Northern Gas Networks

### Project Start

August 2016

### Project Duration

1 year and 2 months

### Nominated Project Contact(s)

Gillian Wardman

### Project Budget

£43,329.00

## Summary

This solution would offer capability for an electronic data transfer that has in-built validation to remove the need for extensive administration work leading to efficiency improvements. Also the solution allows for real time data transfer that is GPS tagged and date and time stamped to provide evidence of when and where the survey was undertaken.

The physical testing of the proposal would be to undertake field trial site surveys using this electronic solution. To facilitate the field trials 3 x SMART Tablets are required at a cost of £350 per unit.

Upon successful completion it is anticipated that to facilitate network wide implementation c. 30 units would be required.

## Third Party Collaborators

DNV

## Nominated Contact Email Address(es)

innovation@northerngas.co.uk

## Problem Being Solved

Northern Gas Networks (NGN) use a bespoke software application called MRPS (Mains Replacement Prioritising System) to help them to effectively plan the mains replacement of their ferrous distribution mains.

MRPS has the flexibility to prioritise the replacement of distribution mains using many different indicators, such as the risk and condition score of the mains. This allows NGN to produce replacement plans that satisfy the HSE and Ofgem requirements whilst maximising returns under the RIIO framework.

A key component of the workflow is the annual onsite survey conducted to capture essential information regarding features in close

proximity to the network, the number of properties, distance between property and pipe and cellar information. At present this work is undertaken by surveyors capturing records manually using a very time consuming paper based process.

In the calendar year of 2015, 17,290 surveys were completed at a cost of £655,406. These costs were made up of the wages costs of carrying out the surveys. In addition to this there are the office based administrative staff costs in to producing and delivering paper based survey packs to Depots. There can be as many as 30,000 surveys in any one financial year.

DLO staff in the field to undertake the surveys and manually record the data, which is then validated and uploaded by a back office administration team. There is no visibility of previous survey history.

## Method(s)

### Phase 1 – Design

DNV GL will:

- Publish a draft copy of the API specification for review by NGN
- Subject to consultation a formal published API specification will be issued

### Phase 2 – Build and Implementation

DNV GL will:

- Develop and unit test an HTTP based Restful web API.
- Produce and deliver an Installer and supply to NGN (allowing NGN to host on their Windows server TBC, running IIS)
- Integration testing of the new API in conjunction with NGN *\*Note that no changes to the existing MRPS application will take place.*
- Assist NGN in deploying the final release to the production system and provide remote post implementation support.

It is anticipated that the duration of the project to complete phases 1 and 2 will be two months, followed by a period of post implementation support until full roll out

A detailed project plan will be provided to align key milestones with resource availability and programme constraints.

## Scope

This solution would offer capability for an electronic data transfer that has in-built validation to remove the need for extensive administration work leading to efficiency improvements. Also the solution allows for real time data transfer that is GPS tagged and date and time stamped to provide evidence of when and where the survey was undertaken.

The physical testing of the proposal would be to undertake field trial site surveys using this electronic solution. To facilitate the field trials 3 x SMART Tablets are required at a cost of £350 per unit.

Upon successful completion it is anticipated that to facilitate network wide implementation c. 30 units would be required.

**To extend to Sep 17 - This is due to difficulties in the changes required to the mobile application and the issues identified with the way information was transferred into the existing solution. This has been identified as being outside of the scope of the project.**

## Objective(s)

The NGN Smart Work Asset Management project objective is to introduce a mobile application to aid data capture. In order to facilitate the loading of survey records it is proposed that DNV GL will supply a new interface between MRPS and the Smart Work Asset Management Portal.

## Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

## Success Criteria

The project is deemed successful if utilising the interface has proved that we:

- reduce manual intervention
- improve data quality
- provide cost savings through resource efficiencies
- reduce our carbon footprint.

The app that is currently being developed in house will allow engineers to capture information in the field which will feed direct into the MRPS system

Once the MRPS App is deployed to a wider group of staff NGN will gain benefits of a smoother, more responsive process workflow with the added efficiencies of processing records in a controlled and error free automated process.

## Project Partners and External Funding

n/a

## Potential for New Learning

n/a

## Scale of Project

- ? Project plan and project management
- ? API specification documentation
- ? Software installer for test and live environments
- ? Post implementation support

## Technology Readiness at Start

TRL3 Proof of Concept

## Technology Readiness at End

TRL7 Inactive Commissioning

## Geographical Area

The Project will encompass the entire NGN Network geography

## Revenue Allowed for the RIIO Settlement

N/A

## Indicative Total NIA Project Expenditure

Total External Expenditure: £32,500

Total Internal Expenditure: £10,829

Total Project Expenditure: **£43,329**

## 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)

Introduces a more efficient process that reduces the amount of paperwork and consequently staff involved.

#### Please provide a calculation of the expected benefits the Solution

##### Base Cost:

Surveys carried out per annum on average:	£20,000*
Unit cost per survey based on surveyor's salary (£38) and admin resources (£10):	£48
<i>Total Base Cost/annum:</i>	<i>£960,000</i>

##### Method Cost:

Surveys carried out per annum on average:	£20,000*
Unit cost per survey with new method:	£33
30*£350 (SMART Tablets = CAPEX)	+ £10,500
<i>Total Method Cost/annum:</i>	<i>£670,500</i>

Expected financial benefits/annum: 960,000-670,500 = £289,500

This calculation does not the unit cost of the interface to be developed as it is unknown at this stage.

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

This method is replicable across the geography of all 8 gas distribution networks in the UK.

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

(Project cost\* number of network licensees) + (CAPEX\*number of GDNs):

$$(43,000*4) + (10,500*8) = £256,000$$

This calculation does not take the unit cost of the interface to be developed as it is unknown at this stage.

### 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

MRPS was developed by DNVGL and is used by all 4 GDNs. The new technology can therefore easily be implemented by the other GDNs

#### 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 project addresses two of NGN's Innovation focus areas: Network and Asset Management and Environment and Health & Safety. The latter will be addressed through reduced paperwork and mileage.

- 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