

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

Sep 2019

Project Reference Number

NIA_SGN0147

Project Registration

Project Title

Dark Data Regulator Maintenance

Project Reference Number

NIA_SGN0147

Project Licensee(s)

SGN

Project Start

October 2019

Project Duration

0 years and 4 months

Nominated Project Contact(s)

Stuart Sherlock

Project Budget

£65,317.00

Summary

This project looks to assess historical asset data and determine whether it can be used to predict future failures, helping to prove or disprove maintenance hypothesis.

Nominated Contact Email Address(es)

sgn.innovation@sgn.co.uk

Problem Being Solved

Many of our critical above 7 bar assets use real time feedback telemetry data on information such as performance and faults occurring. It is currently not used to predict failures before they happen. Asset failure can lead to significant costs and disruption, whereas if failures were known about before they happen then the asset could be monitored, and repair work could be planned to minimise disruption.

Method(s)

This project aims to carry out an in-depth analysis of real time telemetry on SGN above 7 bar assets, helping to understand and predict asset failures, feeding our telemetry strategy for the future.

The findings from this project will inform our telemetry strategy and will give SGN visibility of occurring asset failures and the factors that cause them. This will allow us to capture the net benefits of data collection with the risks and costs associated with their installation and operation. The project output will be a report including background data, findings and recommendations going forward.

Scope

The aim of this project is to explore the potential for using data to drive maintenance activities. This data analysis will create actionable insights to help SGN determine the types of interventions and most value adding activities.

This will involve collection of different datasets for example SGN asset pressure data, asset maintenance log, and weather data. This will give an understand if our existing data collection process is valuable in predicting failure, managing gas flow and whether the

amount of data collected should be reduced.

Objective(s)

The objectives of this project are to:

- Workshop meeting to discuss datasets and problem hypothesis.
- Initial review of datasets.
- Complete review of datasets.
- Produce report consolidating all information, actionable insights and recommendations.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The following success criteria for the project include the completion of:

- Meeting to be held with project partner and SGN project representatives to discuss and finalise required datasets and problem hypothesis.
- Datasets to be made available and sent to project partner. A report will be produced outlining findings of the initial review.
- Report outlining findings from the completed review. This will include information and feedback from initial review.
- Detailed report outlining the work carried out including dataset analysis, actionable insights and recommendations.

Project Partners and External Funding

PA Consulting Limited

Potential for New Learning

The project aims to carry out an in-depth dataset analysis of SGN above 7 bar assets, helping to create an understanding of predicting asset failures feeding our telemetry strategy for the future.

Based on the findings and actionable insights, there is potential for follow on projects. If there is any follow on project this has the potential to feed into RIIO-GD2 workload.

Scale of Project

The project involves analysis of different datasets for above 7 bar assets.

The outcome from this project will be a report outlining actionable insights and recommendations that could be the basis for forming follow on projects.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL3 Proof of Concept

Geographical Area

This project will be focused on SGN's network, but the outputs and methods can be shared with all the GDNs.

Revenue Allowed for the RIIO Settlement

This is a low TRL research project, therefore not applicable.

Indicative Total NIA Project Expenditure

The total project expenditure is £65,317, 90% (£58,785.30) of which will be recovered via the NIA funding mechanism in line with the funding conditions.

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)

It is expected that if successful this project could provide Network Licensees with an opportunity to make savings during maintenance activities, therefore providing net financial benefits to customers.

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 potential outcomes of this project are applicable to all networks, where Network Licensees are aiming to improve maintenance activities.

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

N/A

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 learning gained from this project aims to inform Network Licensees of the potential use of capturing datasets and how it can be used to drive maintenance activities.

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

Within the innovation strategy key 'Innovation Themes', this project primarily addresses 'Repair' as well as 'Reliability' and 'Maintenance'.

- 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 review has been made of all other Network Licensees and no other similar projects have been carried out.

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

Current maintenance activities are often reactive. This project looks to use existing datasets to analyse historical trends which could give indication to future faults, allowing for a proactive maintenance approach.

Relevant Foreground IPR

n/a

Data Access Details

n/a

Please identify why the Network Licensees will not fund the project as part of it's business and usual activities

This project involves a desktop study to assess the information within SGN datasets for above 7 bar assets. The NIA framework offers a robust, open framework to support this work and ensure the results are fully articulated to all stakeholders and interested parties.

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

This NIA project has a low TRL and involves carrying out a conceptual study. This project is applicable to all the GDN's where the learning can be shared between the networks.

This project has been approved by a senior member of staff

Yes