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

Mar 2021

Project Reference Number

NIA_WWU_071

Project Registration

Project Title

DBS:Test, Review, Recommend

Project Reference Number

NIA_WWU_071

Project Licensee(s)

Wales & West Utilities

Project Start

March 2021

Project Duration

1 year and 1 month

Nominated Project Contact(s)

Matthew Phillips, Tom McPherson

Project Budget

£120,266.66

Summary

A project to assess the suitability to use the DBS system in the UK.

Nominated Contact Email Address(es)

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Problem Being Solved

It is recognised that COVID-19 has created several new challenges for networks in respect of day to day working to ensure our customers, especially the most vulnerable, are kept safe and warm. During the pandemic working practices under COVID-19 meant operatives were not always allowed access to customers property, except in an emergency. Although this has now changed, it did highlight a long standing issue whereby there is no qualified means to transfer a service without accessing the property and performing the required purge and relight.

A “Live Service Transfer (LST) Taskforce” was created which sought to address the issues of entering a customer’s property, the group brought together all GDNs to work together on this project. An opportunity that arose from the LST Taskforce project was the Mueller Gas “DBS System”, for live intervention on steel pipelines, that would enable a bottled gas connection to be made whilst the upstream service line is replaced.

Currently there is no way of relaying a metallic service without interrupting the supply of the customer. It is understood that a product called ‘DBS’ has been in use in the United States since 2008 and has been used on over multiply services. It is a “simple 12-minute process” that enables the customer’s gas supply to be transferred on a temporary basis to a bottled gas system. In principle, this was designed to allow the meter to be replaced; however, it is acknowledged that there is potential it could be used to enable the replacement of a service.

Although initially driven by the challenges faced by the GDNs surrounding COVID-19 and the issues of relaying a metallic service, it is

believed that the DBS systems usefulness outweighs the current situation. It has the potential to be an enduring product as it would remove the need to complete purge and relights in certain scenarios and also improve the service offered to vulnerable customers on our network.

Method(s)

This work is an initial 'test and review', to demonstrate that DBS can – or cannot – provide value to the GDNs.

It's use in the UK is envisaged to be different to the main application in the US, and therefore work to determine the key application and the business case for those is required.

The project will test the suitability of the DBS system to the UK market. Testing will be carried out in a representative environment to allow the networks to understand the capabilities of the system and build a business case for future use. A standards review will also be undertaken, this will form part of a gap analysis, which will enable networks to understand what is needed for formal accreditation / qualification for use of the systems on the network.

Scope

WP1: Purchase Systems from Mueller Gas

Timescales for this have not been confirmed, but we have estimated 3 months from order to fulfilment of order in the UK.
Information on what qualification work has been undertaken by Mueller will be gathered at this time as well. This will be reviewed and any concerns or gaps highlighted.
Outcomes from this work pack will be:
• Two DBS tools
• Critical Review of Previous Qualification work from Mueller

WP2: Initial Lab Use of DBS

This work pack will cover the initial uses of the tool by the Steer Team.
Outcomes from this work pack will be:
• Arrival of the DBS system
• Basic learning in the system obtained by Steer to ensure the safe use of the tools. This will also inform what requirements for training will be needed for GDN staff.
• Initial uses of the tools by the Steer team

WP3: Technical Review of Product through basic Operational Testing

Small-scale testing and operation will be undertaken, this activity will give an initial hands-on feel for the suitability of the system for typical operations.
Key to this project is understanding if the system can be used comfortably by key GDN staff in order to carry out the work. There are a number of different ways of testing this, but it is proposed to split this into 2 different routes:
1. Carrying out a minimum of 20 different connections (for example, 10 straight line and 10 elbows) capturing time taken, challenges and concerns. This will provide a statistically relevant framework on which to build any business and safety case. This could include, for example:
a. Time taken for each connection including redress and preparation of tooling
b. Any unexpected leakage / pressure change
c. Any debris left in the system
2. Provide Operational review through WWU staff using the tool and providing feedback.
a. This will take the form of hands-on operation and interviews
b. As well as time and technical appraisal, discuss and understand the perceived impact on safety during and after ops.

Outcomes from this work pack will be:
• Initial Operational Test Data
• Qualitative responses from (lead) GDN on its suitability for intended use
This will provide a technical review of the physical equipment and an assessment of its suitability for use.

WP4: Determining key applications and Business Case

This workpack seeks to highlight the potential range of applications for the tooling, and then to determine the business cases to support the funding of any future work. The business case will cover off both financial benefits to WWU but also the positive impacts on vulnerable customer that the innovation could bring.

During this workpack, Steer will survey both Operational Teams (most likely during WP3), as well as Business leaders, to the

opportunities for this tool.

The applications highlighted will then be rated and Steer will work with WWU to develop the appropriate Business Cases.

WP5: Review of findings and decision to proceed
This work pack will review the findings of the project to date and pull in the work from previous work packs in order to provide the framework for any decision to proceed with formal qualification onwards to a larger order of DBS systems.

WP6: Standards mapping review regarding DBS and recommendations
This work pack will be structured into 2 parts.

Firstly, Steer alongside the GDNs, will conduct a Standards review, essentially a desktop review of the standards that the Mueller system has been accredited to in the US, and how that will transfer over to the current UK system.

Secondly, using the information a gap analysis will be created, enabling recommendations for formal accreditation / qualification for use of the systems on the GDNs network or consumer side of the meter (to be carried out in Phase 2) to be created.

Note that alongside this work, it is believed that significant work will have to be undertaken by the GDNs on demonstrating the safe use of bottled gas for the wider community. SGN's experiences in Oban will inform this work, as well as the ongoing work under SOFTPANG from NGN. Steer are not expecting to have input into this work, but the outcomes will be fed into this project.

Objective(s)

To provide an overview of the DBS system and understand if it allows a service relay to be carried out on external meters, without the need to disrupt the customer's supply. It is anticipated that there are other uses for the product such as service governor replacements, as well improving the service offered to vulnerable customers. This project will explore all the opportunities the product can bring and present a business case which will encompass both financial benefits, as well benefits for vulnerable customers.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

An evaluation and benefits case so networks can understand if this system can add value for its customers

Project Partners and External Funding

Project partners: Steer Energy. The project will be wholly funded via the NIA.

Potential for New Learning

This system is currently not used in the UK and its proposed use by GDN's is different to how networks in America currently use it. The project will provide learning to all networks on the uses for the system and if a positive CBA can be built.

Scale of Project

The project will trial the system in a representative environment. Trials on the network are out of scope of this project

Technology Readiness at Start

TRL6 Large Scale

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

As lockdown restrictions are currently in place, the area of trials has yet to be determined. Most likely within the Wales & West Utilities & NGN networks.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

External: £90.200
Internal: 30,066.66

WWU External: £71,725
WWU Internal: £23,908.33

NGN External: £18,475
NGN Internal: £6,158.33

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 aim is to produce a CBA, as currently it is unknown exactly how the system would work and what savings could be achieved from it's use.

Please provide a calculation of the expected benefits the Solution

A CBA will be produced as part of the project

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

The use would be replicable across the whole of Great Britain.

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

Once use cases are understood, roll out costs can be determined.

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 DBS system was identified by the LST Taskforce, which had representation from all networks. This system could benefit all networks in the same way. Learning will be shared with all networks.

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

n/a

☑ 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.

The DBS system was identified by the LST Taskforce, which had representation from all networks. No duplication was raised.

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 current mains replacement approach offers no flexibility, meaning we must enter the property and disconnect the customer, the only other option is to not replace the main. It is not always possible to know which customers will need to have their services isolated, GDNs need to develop a suitable approach that can be applied in the field, avoiding the potential for a complete re-planning of the job or part replacement.

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

This project did not form part of the RIIO GD1. It requires funding outside of this

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

By utilising NIA funding, outcomes of the project will be shared with all GDN's but also the market place, which could generate competition and see similar products bought to the market.

This project has been approved by a senior member of staff

☑ Yes