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

Apr 2014

Project Reference Number

NIA_WWU_010

Project Registration

Project Title

Soil & Groundwater Remediation Technologies for Gasworks and Gasholders Sites

Project Reference Number

NIA_WWU_010

Project Licensee(s)

Wales & West Utilities

Project Start

May 2014

Project Duration

0 years and 7 months

Nominated Project Contact(s)

Oliver Lancaster

Project Budget

£36,364.00

Summary

The project will consist of one stage and it is envisaged that the document “Soil and Groundwater Remediation Technologies for Gasworks and Gasholder Sites” will be produced. Under each heading there is a description of how the information would be gathered and why it should be included.

It will include:

Background, research and report.

Drivers & legislative position

Description of the treatment technologies and processes

A study of previous case studies both UK & globally

Identify opportunities for technology gaps, developments and their technology readiness levels.

Third Party Collaborators

CL:AIRE

Energy Innovation Centre

Nominated Contact Email Address(es)

innovation@wwutilities.co.uk

Problem Being Solved

The Gas Industry has been in operation for 200 years, and over this time over 3,000 locations around the country were utilised for the manufacture of Coal Gas also known as manufactured gas or Town Gas. The manufacture of gas was widely used throughout the UK until the late 1960's.

The process of manufacturing gas usually produced a number of by-products that contaminated the soil and groundwater in and around the manufacturing plant. Many former gasworks sites are a serious environmental concern, and clean up and remediation costs are often high. Gasworks were typically sited near or adjacent to waterways that were used to transport in coal and for the discharge of wastewater contaminated with tar, ammonia and/or drip oils, as well as outright waste tars and tar-water emulsions.

Industry Drivers: Gas Distribution Networks (GDNs) have been driving down operational costs in their individual Network. Following the commencement of RIIO–GD1, GDNs have a further requirement to drive down total costs and manage assets efficiently. Many GDNs own former gas manufacturing sites that are redundant or operationally constrained by live gas infrastructure. Since traditional methods to manage contaminated land are expensive and not environmentally friendly, there is a requirement for these GDNs to find an environmental, effective and efficient method to remediate the land.

Method(s)

An assessment report on former gasworks sites will be undertaken and recommendations made on emerging technologies and best practice methods that would be appropriate for on-site remediation.

Scope

The project will consist of one stage and it is envisaged that the document "Soil and Groundwater Remediation Technologies for Gasworks and Gasholder Sites" will be produced. Under each heading there is a description of how the information would be gathered and why it should be included.

It will include :

Background, research and report.

Drivers & legislative position

Description of the treatment technologies and processes

A study of previous case studies both UK & globally

Identify opportunities for technology gaps, developments and their technology readiness levels.

Objective(s)

To seek understanding of the key issues and contaminants that all Gas Distribution Networks face when remediating gasworks and gasholder sites and produce a report that can be used for future reference material giving insight into new and emerging approaches for this problem area.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

The development and production of a report detailing the most innovative and up-to-date methods of soil and groundwater remediation technologies for gasworks and gasholder sites.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

This is a research based project that identifies the best practice methods of soil remediation, identifies the gaps & the near to market

technologies that may address those gaps.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL3 Proof of Concept

Geographical Area

WWU will carry out the project in their Network geographical area and with consultation to other UK GDNs. It is expected that sites in WWU Network will mirror other sites across the Country. All information gained will be shared with the other UK GDNs.

Revenue Allowed for the RIIO Settlement

None

Indicative Total NIA Project Expenditure

External cost - £27,300 of which £24,570 is eligible NIA expenditure (90%)

Internal cost - £9,363.60

Total - £36,663.60

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)

This report will identify efficient and innovative ground remediation technologies that can be adopted in by the GDN environmental supply chain to reduce the costs of land remediation outputs to the consumer.

Please provide a calculation of the expected benefits the Solution

n/a

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

There are approximately 4,000 gasworks sites in the UK of which c. 1,000 are within GDN ownership. Some of these have received remediation but a significant amount still require remediation works. The document will help drive efficiencies for owners of other gasworks sites as well as for the GDNs and encourage the adoption of new methods.

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

There should be no associated roll out cost. The final report will be made available to GDNs and their environmental supply chain for their use.

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

☐ 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

This report will detail all existing, new and innovative methods of land remediation and enable the Gas Network to select the best solution for the sites in question, allowing for cost, environmental, social impact and location to be judged in equal measure to ensure a balanced decision.

It would allow GDNs to manage contaminated land efficiently and assist in driving down total network costs so delivering a more sustainable energy sector.

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

Environmental impact

☑ 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

- [x] Yes