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 2014

Project Reference Number

NIA_NGN_080

Project Registration

Project Title

Management of wastewater

Project Reference Number

NIA_NGN_080

Project Licensee(s)

Northern Gas Networks

Project Start

December 2014

Project Duration

0 years and 7 months

Nominated Project Contact(s)

Derek Field

Project Budget

£61,964.00

Summary

This project will consider existing NGN procedures relating to the management of wastewater arising from NGN operational activities and review existing working practices and arrangements.

The project will incorporate a review of commercially available technologies that can be used to characterise, treat and dispose of wastewater and identify opportunities for prevention, re-use and recycling of wastewater together with a high level economic assessment of identified initiatives.

Outputs from the above reviews will be used to inform the development of an improved operational decision matrix for use by operational teams to identify the required actions for treatment, handling and disposal of wastewater.

Text for the revision of the existing NGN 'Management of Wastewater & Sampling Discharges' procedures

to accommodate proposed changes to working practices for the handling, treatment, recycling and disposal of wastewater arising from the review, will be provided.

Third Party Collaborators

Water Research Council

Nominated Contact Email Address(es)

innovation@northerngas.co.uk

Problem Being Solved

As part of day to day activities, Northern Gas Networks needs to manage wastewater which can arise from fixed sites (e.g. gas holder

sites), temporary operational sites (e.g. excavations) and directly from the gas network infrastructure (e.g. water collected in siphons or pipelines).

Failure to manage wastewater arising from NGN operational activities in an appropriate manner, increases the risk of an environmental pollution or Health & Safety event materialising. NGN therefore wish to undertake a review of its existing arrangements and emerging technologies for managing wastewater within NGN operations with a view to developing a more effective process.

Method(s)

The project incorporates a series of structured tasks, each with clearly defined deliverables that provide a means to review existing wastewater management procedures / working practices and to identify commercially available technologies that can be used to characterise, treat and dispose of wastewater. The review findings will be used to facilitate the production of an operational decision matrix to enable operational teams to identify the required actions for treatment / handling / disposal of wastewater and a revision of procedures covering the handling, treatment, recycling and disposal of wastewater arising from NGN operational activities.

The project will incorporate a workshop for key personnel to ensure that new procedures and opportunities arising from the project are effectively communicated and understood.

Scope

This project will consider existing NGN procedures relating to the management of wastewater arising from NGN operational activities and review existing working practices and arrangements.

The project will incorporate a review of commercially available technologies that can be used to characterise, treat and dispose of wastewater and identify opportunities for prevention, re-use and recycling of wastewater together with a high level economic assessment of identified initiatives.

Outputs from the above reviews will be used to inform the development of an improved operational decision matrix for use by operational teams to identify the required actions for treatment, handling and disposal of wastewater.

Text for the revision of the existing NGN ‘Management of Wastewater & Sampling Discharges’ procedures

to accommodate proposed changes to working practices for the handling, treatment, recycling and disposal of wastewater arising from the review, will be provided.

Objective(s)

This project will undertake a review of current procedures and working practices relating to the management of wastewater arising from operational activities / NGN infrastructure and identify new technologies available to improve sustainability and performance.

Where appropriate, the project will develop revised wastewater handling, treatment and disposal procedures containing clear, unambiguous guidelines for a broad range of site specific scenarios.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

Following this research NGN should be able to:

- Reduce operational risk with respect to wastewater related activities.

- Identify opportunities for prevention, re-use and recycling of wastewater to improve the sustainability of the NGN operation and potentially offer cost savings to the business.
- Summary of commercially available mobile wastewater treatment and spill prevention technologies and highlighting technologies most suitable for use by UK GDNs.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

This project requires the input of technical knowledge and experience from the water sector to provide support to NGN to improve sustainability and performance in the management of wastewater arising from operational activities. The project is structured as follows

Task 1: Review of current procedures and working practices relating to the management of wastewater arising from operational activities/infrastructure.

Task 2: Review of commercially available portable test kits and methods to characterise wastewater.

Task 3: Review of commercially available mobile wastewater treatment and spill prevention technologies.

Task 4: Review of opportunities for prevention, re-use and recycling of wastewater.

Task 5: Production of an improved operational decision matrix to enable operational teams to identify the required actions for treatment / handling / disposal of wastewater.

Task 6: Revision and update of procedures covering the handling, treatment, recycling and disposal of wastewater arising from operational activities.

Task 7: Impact assessment Workshop.

Technology Readiness at Start

TRL4 Bench Scale Research

Technology Readiness at End

TRL7 Inactive Commissioning

Geographical Area

Site visits to talk to operational personnel to establish working practices / arrangements at a sample of excavation sites and operational depots will be undertaken within the NGN network.

Revenue Allowed for the RIIO Settlement

NA

Indicative Total NIA Project Expenditure

Total External Spend - £46,589

Total Internal Spend - £15,467

Total Spend - £62,056

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 project will deliver alternative methods for dealing with management of wastewater as a result of our operational activities.

Please provide a calculation of the expected benefits the Solution

NA - Research project

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

Once complete this project will inform us of the best management of wastewater on a UK gas distribution network which can replicated across all networks

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

NA - research project

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

More sustainable and effective ways to deal with contaminated water caused from operational 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)

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.

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