national gas transmission

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 2014

Project Reference Number

NIA_NGGT0061

Project Registration

Project Title

PRCI - Pipeline Research Council International 2014

Project Reference Number

NIA_NGGT0061

Project Licensee(s)

National Gas Transmission PLC

Project Start

April 2014

Project Duration

1 year and 1 month

Nominated Project Contact(s)

Tony Stonehewer & Robert Owen

Project Budget

£150,000.00

Summary

Participation in PRCI gives National Grid Gas access to research projects that may otherwise be more difficult to fund on an individual basis, as well as the opportunity of validating work carried out on internal programmes. There are extensive networking opportunities with other gas transporters and across the wider industry. Collaboration through this organisation will continue to play a key role in the innovation portfolio.

Preceding Projects

NIA_NGGT0003 - PRCI - Pipeline Research Council International

Third Party Collaborators

Pipeline Research Council International

Nominated Contact Email Address(es)

Box.GT.Innovation@nationalgrid.com

Problem Being Solved

The Pipeline Research Council International (PRCI) is the basis of much of the international research for gas pipelines and above ground installations, providing knowledge to members effectively and economically. PRCI aims to conduct a collaboratively-funded research & development programme that enables energy pipeline companies around the world to provide safe, reliable, environmentally compatible, cost-efficient service to meet customer energy requirements.

Method(s)

The Pipeline Research Council International (PRCI) facilitates a collaborative R&D programme, funded by contributions based on the total length of pipelines operated by each member company. Each member company contributes to the projects that most closely address their needs, but all member companies have access to the output of the complete programme.

Projects are balloted annually and members participate in projects that most closely meet their individual network needs. National Grid completed a review of the projects, with a process that involves :

Assessment of the full ballot list to identify relevant projects for the licensee.

· Discussion with the relevant technical specialists to evaluate potential project value and benefits.

· Identification of National Grid team member for each project.

· Participation in the annual voting process. PRCI projects go through three rounds of voting to determine which projects will be taken forward.

The eight projects that National Grid participate in for the 2014 programme offer leverage of 20:1 and broadly these fall into four key areas:

· Time-dependent Threat Management (including External Corrosion and Mechanical Damage)

· Time-independent Threat Management (including Mechanical Damage, Weather and External Force)

· Design and Construction

· Measurement

The 2014 ballot is presented in the attached appendix.

Scope

Participation in PRCI gives National Grid Gas access to research projects that may otherwise be more difficult to fund on an individual basis, as well as the opportunity of validating work carried out on internal programmes. There are extensive networking opportunities with other gas transporters and across the wider industry. Collaboration through this organisation will continue to play a key role in the innovation portfolio.

Objective(s)

National Grid wants to establish best practice technologies and techniques to allow safe, reliable, efficient and economic use of the gas network with a reducing impact on the environment. By participating in PRCI, National Grid has and will continue to benefit from the international experience of the other member companies' representatives, while benefiting from significant leverage on project activity from the other member companies.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

National Grid assesses the collaboration through individual projects against the ability to develop improvements to how we build, manage and operate the network. Success is also determined by the level of influence we can exert on each research programme and the financial leverage available compared to self funding the research.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

The projects are hugely varied in scale. For example " Performance Testing of Large Magnetometer Tools " will involve full scale trials

at a purpose built facility, whilst "State of the Art – Alternatives to Steel Pipelines", in the first phase is purely a desk based study.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL6 Large Scale

Geographical Area

The results from this project will be applicable across gas networks throughout the world.

Revenue Allowed for the RIIO Settlement

None

Indicative Total NIA Project Expenditure

$10 million - Total PRCI budget

£150,000 - Annual NIA spend

£75,000 – NIA National Grid Gas Transmission

£75,000 – NIA National Grid Gas Distribution

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)

For the PRCI, formal cost/benefit studies of member participation show a consistently positive ratio the reduced costs of operations and maintenance, inspection, materials, design, construction and testing. For example:

Assuring the Permanency of Composite Systems for the Repair of Corrosion. The project is undertaking a validation of composite materials for long-term service. Two hundred and one 8-ft samples are being assessed across five 10-year study participants (suppliers providing 21 samples each) and eight 3-year study participants (12 samples each). The program is extremely important in terms of letting the repair industry know what is expected and increasing operator exposure to the composite repair industry. Within each of the three years tests to date, a number of burst tests have failed in the repair region and below 275 bar. National Grid will be increasingly looking to composite solutions as a key part of the asset management strategy and the new learning that this project generates will play an important role in decisions taken over pipeline repair. The financial leverage from PRCI is critical as work on this scale (physical testing of 201 samples over a ten year period) is not something that would be undertaken by the business directly.

In the case of PRCI, National Grid can use its subscription fee to support its choice of projects, but additionally, National Grid Gas has full access to the results of all other projects that it does not specifically support.

Please provide a calculation of the expected benefits the Solution

Research therefore N/A

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

Knowledge from participation in the various international innovation programmes is applicable across the gas transmission and distribution network, for example research on pipeline materials and third party damage.

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

This could range from £0 to approximately £100,000 but is completely dependant of the project specific details. In some cases results

may be used to update policy, standards and specifications in order to reflect best practice. In other instances further work may be triggered to fully assess the implications for the GB networks. Alternatively results may simply improve the knowledge base and avoid unnecessary future expenditure.

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):

- [x] 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)
- [x] 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

Learning will be used to direct future developments into the most promising areas and where applicable update policies and standards. This will allow the research results generated to be applied to our network.

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

Knowledge from this project will address many areas identified in the Innovation Strategy including safety, reliability, environment and strategic issues.

- [x] Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

Is the default IPR position being applied?

- [x] 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