

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

Feb 2022

Project Reference Number

NIA2_SGN0015

Project Registration

Project Title

Servitudes and Easements

Project Reference Number

NIA2_SGN0015

Project Licensee(s)

SGN

Project Start

January 2022

Project Duration

0 years and 5 months

Nominated Project Contact(s)

Graham Cox

Project Budget

£80,000.00

Summary

The strategic planning of any upgrade to existing or new pipelines to enable conversion is a vital step towards net zero transition. An understanding of the existing legal basis on which assets have been deployed and managed will be vital in the planning of this work.

A full understanding of the rights and obligations included in existing servitudes and easements will be essential to ensure that the legal risks identified can be mitigated. This will also enable any costs associated with amendments to legal agreements to be identified so they can be included in system transformation or conversion funding applications.

The intention is that a legal review of the 1025 records will be undertaken by a paralegal through an approved legal partner following a formal procurement selection process.

Third Party Collaborators

CMS

Nominated Contact Email Address(es)

sgn.innovation@sgn.co.uk

Problem Being Solved

The transition of the gas network from methane to hydrogen is vital in the delivery of the UK's 2050 Net Zero ambitions. The network operations required to transition from a 0-20% blend to 100% hydrogen will become increasingly complex as the industry moves from managing one to multiple gases. The pathway to transition requires significant work and interventions at network level to be identified prior to commencement. The strategic planning of any upgrade to existing or new pipelines required to enable the conversion is a vital step towards this transition. An understanding of the existing legal basis on which assets have been deployed and managed will be vital in the planning of this work.

A full understanding of the rights and obligations included in existing servitudes and easements will be essential to ensure that the legal risks identified can be mitigated. This will also enable any costs associated with amendments to legal agreements to be identified so they can be included in system transformation or conversion funding applications.

Method(s)

To provide a technical solution, Slovincs formula ($n = N / (1 + Ne^2)$) was used to derive a sample size that delivered a 99% confidence level and only a 4% error rate. Application of this formula to 70,000 documented servitudes and easements provides the suggested sample size of 1025. The intention is that a legal review of the 1025 records will be undertaken by a paralegal through an approved legal partner following a formal procurement selection process.

These 1025 records will be selected to ensure that the sample:

- Represents all pipe size diameters
- Covers all pressure tiers
- Covers start, middle and end of every decade
- Dovetails into existing strategic projects
- Represents above ground plant

Scope

Once the legal work is concluded, the outputs of the review will determine what can and cannot be done within the parameters of the existing servitudes and easements.

- Does the agreement cover the transport of hydrogen or other products that differ to natural gas?
- Can a parallel or secondary pipeline be laid within the curtilage of the easement?
- Is it possible to renew the pipeline with an upgraded/different sized pipeline suitable for hydrogen?
- What is the implication of increasing the pressure tiers (specifically those associated with high pressure pipelines and property density ranges)?
- If the pipelines are decommissioned, what are the legal responsibilities on the servitude or easement - for example would it need to be removed?
- Do we have any restrictions or commercial opportunities on any decommissioned pipelines?
- If a pipeline is sold, does the existing agreement transfer to new pipeline owner?

Objective(s)

The objective is to provide detailed responses to the questions below, to identify and mitigate any future risks and determine cost in advance of system transformation.

- Does the agreement cover the transport of hydrogen or other products that differ to natural gas?
- Can a parallel or secondary pipeline be laid within the curtilage of the easement?
- Is it possible to renew the pipeline with an upgraded/different sized pipeline suitable for hydrogen?
- What is the implication of increasing the pressure tiers (specifically those associated with high pressure pipelines and property density ranges)?
- If the pipelines are decommissioned, what are the legal responsibilities on the servitude or easement - for example would it need to be removed?
- Do we have any restrictions or commercial opportunities on any decommissioned pipelines?
- If a pipeline is sold, does the existing agreement transfer to new pipeline owner?

The initial phase of this project will be stage gated prior to progression of any future phases.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

The project will identify any servitude and easement risks associated with transitioning the gas network to 100% hydrogen meaning the networks can react to the transition of the energy market, thus ensuring that all customer groups have options when choosing net zero energy. For those within the vulnerable group they will continue to have the ability to ensure the most reliable and cost-effective source of energy is available to them, whilst ensuring that the UK's energy supply is secure and able to accommodate demand during peak winter months.

Success Criteria

The success criteria are detailed below:

- 1) Detailed legal review of 1025 representative servitude and easement documents completed to provide risk analysis
- 2) Provide assurance that legal requirements can be met in regard to servitudes & easements during the transition to 100% hydrogen

Project Partners and External Funding

Wales and West Utilities and Northern Gas networks have been, and will continue to be, engaged on a stakeholder/advisory basis. No additional funding/contribution will be provided.

Potential for New Learning

Project outputs will reduce current uncertainties and provide a full understanding of the rights and obligations included in existing servitudes and easements to ensure that any legal risks identified can be mitigated in order to transition the network towards net zero. Findings will be formally reported and disseminated accordingly.

Scale of Project

The project is to understand the servitude and easement related risks of transporting 100% hydrogen and the feasibility and scope for possible future phases. This project would be considered a small-scale project under Phase 1.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL3 Proof of Concept

Geographical Area

The project will be using the SGN footprint of Southern England and Scotland, but the basic principles can be extended GB wide.

Revenue Allowed for the RIIO Settlement

Not Applicable to this R&D project.

Indicative Total NIA Project Expenditure

£106,640.00 Total Expenditure[TF1]

£95,976.00 Recoverable through NIA

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:

The transition of the gas network from methane to hydrogen is vital in the delivery of the UK's 2050 Net Zero ambitions. The network operations required to transition from a 0-20% blend to 100% hydrogen will become increasingly complex as the industry moves from managing one to multiple gases. The pathway to transition requires significant work and interventions at network level to be identified prior to commencement. The strategic planning of any upgrade to existing or new pipelines required to enable the conversion is a vital step towards this transition. An understanding of the existing legal basis on which assets have been deployed and managed will be vital in the planning of this work.

How the Project has potential to benefit consumer in vulnerable situations:

The project will identify any servitude and easement risks associated with transitioning the gas network to 100% hydrogen meaning the networks can react to the transition of the energy market, thus ensuring that all customer groups have options when choosing net zero energy. For those within the vulnerable group they will continue to have the ability to ensure the most reliable and cost-effective source of energy is available to them, whilst ensuring that the UK's energy supply is secure and able to accommodate demand during peak winter months.

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)

N/A

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 outputs from this project can be replicated across gas networks UK wide. The scope of the project details the legal validity/limitations of servitudes and easements for gas distribution pipes and is not dependent on geographic location.

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

As this is a research project, it is not possible to estimate cost at this time.

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 from this project and its outputs will allow other gas transporters to apply the outputs to their own network.

It will detail what, if anything, needs changing in relation to servitudes and easements when transitioning to 100% hydrogen transportation.

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

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 potential outcomes of this project are applicable across all GDN's. The Network Licensees are aiming to reduce carbon emissions whilst maintaining security of supply. This project will provide a robust understanding that GDN's can use as they transition to 100% hydrogen transportation.

If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.

The scope has been reviewed against existing projects and no areas of duplication have been identified.

Additional Governance And Document Upload

Please identify why the project is innovative and has not been tried before

The project will allow the GDN's to fully understand the legal/validity implications of existing servitudes and easements on their networks as they transition to Net Zero. As the energy requirements change this project will be vital to ensure that the transition to 100% hydrogen transportation is possible.

Relevant Foreground IPR

N/A

Data Access Details

Data for this project and all other projects funded under the Network Innovation Allowance (NIA), Network Innovation Competition (NIC) or the new Strategic Innovation Fund (SIF) can be found or requested in a number of ways:

- A request for information via the Smarter Networks Portal at <https://smarter.energynetworks.org>, to contact select a project and click 'Contact Lead Network'. Cadent already publishes much of the data arising from our innovation projects here so you may wish to check this website before making an application.
- Via our managed mailbox energyfutures@sgn.co.uk
- Any consumer data gathered throughout this project will be anonymised and will be compliant with General Data Protection Regulations (GDPR) and the UK Data Protection Act. Any compliant data can be made available for review upon request.

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

The project will develop a formal understanding of the legality/validity of servitudes and easements relating to the gas distribution network and can be applied to GDNs UK wide as they transition towards Net Zero. As such, it is not part of the usual activities of the business.

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

The NIA framework offers a robust, open framework to support this work and ensures the results are disseminated to all licensees. The understanding of the legality and validity of servitudes and easements will be vital as we move to Net Zero. The project will address all considerations and requirements to allow for the changing demand profiles and delivery to end users, thus ensuring security of supply.

This project has been approved by a senior member of staff

Yes