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

Oct 2021

Project Reference Number

NIA2_SGN0007

Project Registration

Project Title

North East Scotland Pre-FEED

Project Reference Number

NIA2_SGN0007

Project Licensee(s)

SGN

Project Start

October 2021

Project Duration

1 year and 3 months

Nominated Project Contact(s)

Phil Bradwell

Project Budget

£1,018,810.00

Summary

In order to stimulate growth in the hydrogen economy, SGN have developed the Aberdeen Vision and NE Industrial Clusters projects. These projects involve the installation of a dedicated hydrogen pipeline from St Fergus to Aberdeen. The outputs of this study are to produce a Pre-FEED analysis that will provide a clear basis for FEED execution. Illustrating preferred development of pipeline routeing, required pipeline facilities, ensuring its characteristics will support further expansion of the hydrogen system and detailed costs for FEED will be critical to ensure SGN secure funding under Ofgem's Net Zero Pre-Construction and Net Zero Reopener funding mechanisms.

Nominated Contact Email Address(es)

sgn.innovation@sgn.co.uk

Problem Being Solved

The UK government has committed to reducing greenhouse gas emissions to Net Zero by 2050, with Scotland committing to 2045. Scotland's interim climate targets of over one million homes to transition to low carbon heating systems by 2030 requires development of low carbon energy solutions. All future energy modelling identifies a key role for hydrogen in providing decarbonised energy for heat, transport, industry and power generation. In order to stimulate growth in the hydrogen economy, SGN have developed the Aberdeen Vision and NE Industrial Clusters projects. These projects involve the installation of a dedicated hydrogen pipeline from St Fergus to Aberdeen. The outputs of this study are to produce a Pre-FEED analysis that will provide a clear basis for FEED execution. Illustrating preferred development of pipeline routeing, required pipeline facilities, ensuring its characteristics will support further expansion of the hydrogen system and detailed costs for FEED will be critical to ensure SGN secure funding under Ofgem's Net Zero Pre-Construction and Net Zero Reopener funding mechanisms.

Method(s)

The main objective as part of the Pre-FEED execution is to support application of funding in accordance with Ofgem RIIO-2 Re-opener

Guidance and Application Requirements. The project will establish an accurate financial estimate for FEED execution costs and schedule. As part of the Pre-FEED, a techno-economic review will cover:

- Pipeline routing for construction
- Pigging facilities
- Spur pipeline assessment
- Selection of required tie in locations and configurations
- Location of Pressure Reduction Stations (PRS)

A sensitivity analysis shall be included for the utilisation of the NTS feeders using new offtakes and LTS pipelines.

We will also carry out analysis of the <7 bar network focusing on the sectorised conversion of regions surrounding Peterhead and Aberdeen. The analysis will highlight the next key areas to convert to 100% hydrogen, anticipated interventions identified from the H21 and H100 projects, and growth of the hydrogen system from the arterial hydrogen transmission route.

The proposal will provide a clear basis for FEED execution, including a defined scope of work. It will allow the preparation and submission of consenting applications to commence and define accurate pipeline routing. A cost estimate for project execution and implementation schedule will be achieved through project completion.

Scope

The scope covers a pre-FEED study for converting the Aberdeen gas networks. DNV will be investigating assets at 7 bar and below. The transmission assets are being covered by Wood Group. The project will also investigate the merits of an interim 20% hydrogen blend phase to facilitate a smoother ramp up of hydrogen production and to gain familiarity and stakeholder confidence in hydrogen as a fuel.

1. **Transmission Assets Analysis**

Phase 1: Pre-FEED

The main objective of the Phase 1 pre-FEED phase is to identify the most optimal route for SGN approval, which will be carried over to Phase 2 for further detailing.

A Level 5 Cost Estimate and Level 2 programme for 3 routes, based on the output and ranking of the Optioneering exercise will be prepared and used for the techno-economical comparison to enable SGN to select and approve the preferred route option.

A planning, consenting and environmental roadmap will be produced for the selected option to highlight the key milestones for the approvals process.

Additional activities during the Phase 1 Pre-FEED include some of the following:

Develop a Project Programme

A Level 2 project programme and road map will be developed for the project. This will include phasing and interfaces of the technical, procurement, construction, commissioning, environmental and safety activities.

Basis of Design (BoD)

A Basis of Design (BoD) will be developed that will set out the key assumptions which underpin the project design. It will include the project design assumptions, specification of any constraints including the site boundary. This will be a live document that will be updated at regular intervals through the design process.

Phase 1 Pre-FEED Engineering

- Hydraulic study – steady state
  - Network analysis of demand vs supply
  - PFDs
- Pipeline routing, system network basic design and initial layouts
- Preliminary Material Selection Review

Risk Register

A comprehensive risk register will be built to ensure the project risks are identified early and tracked through to resolution.

Planning, Consenting and Environmental

Identify potential risks to the projects development by carrying out desk based assessments.

A preliminary planning and consenting roadmap will be developed during Phase 1 to capture the strategy. This will be further developed in the Phase 2. The roadmap will be based on SGN consultation strategy, environmental and risk requirements.

A workshop will be held to identify and assess construction, operation and maintenance safety requirements and impact on the main selected route options.

Spatial Concept, GIS, Constraints and Cost Model Development

Utilise GIS to collect any spatial and constraints data, and to identify potential route options for the pipeline. A common data standard will be created to ensure consistency in data collection.

A high level input cost data structure will be developed and populated for the major elements of the pipeline system for use by the Optioneering and Class 5 Cost Estimate activities.

Three routes will be costed in greater detail as part of the Class 5 Cost Estimate activities.

Preliminary Pre-FEED Report

The report should be in the following format:

- Introduction
- Detailed project development and background
- Pipeline Routing Option(s)
- H2 AGI Locations
- Project delivery
- Conclusions
- Recommendations

Phase 2: Pre-FEED

Key documents from Phase 1 will be updated for use during the FEED phase, and further definition of the selected route will be prepared.

A Level 4 Cost Estimate and Level 3 programme will be produced for the selected route, and a Preliminary Planning, Consenting and Environmental Plan will be prepared to outline the key requirements and activities for the approvals process.

The FEED scope of work and technical deliverables will be prepared to a suitable level of detail to enable qualified engineering contractors to price for FEED.

The main scope is summarised below:

Phase 1 Key Document updates

Key Phase 1 documents will be reviewed and updated to reflect the outputs from the Phase 1 Pre-FEED stage.

- Roadmaps will be updated based on the outputs of the Phase 1 risk assessment and gap analysis and this will determine the extent of the Phase 2 scope.
- Basis of Design (BoD) will be updated based on any relevant findings from Phase 1.
- Risk Register will be updated at the end of Phase 2 phase based on additional assessments undertaken of technical, safety, environmental and commercial workstreams.
- Pipeline Route maps and H2 AGI layouts will be refined as further information becomes available.
- The Overall Project Programme will be further detailed as a Level 3 schedule.

Further Refine the Cost Model

The overall structure for CAPEX/OPEX cost modelling developed during Phase 1 will be further refined. It will be populated with costs based on the selected route and facilities to produce a Class 4 Cost Estimate. It will also consider the future FEED and procurement activities.

System Network Design

The selected system design will be reviewed and detailed to the required level of detail to be included in SGN's Invitation to Tender (ITT) for FEED. The main studies listed below will be developed:

- Prepare preliminary philosophies
  - Pipeline Design philosophy including CP design
  - Testing and commissioning Philosophy
  - Inspection Maintenance and Repair Philosophy
- Flow Assurance/Process
  - Finalise the hydraulics study as required and prepare the blowdown study
  - Finalise system PFDs
  - Prepare preliminary P&IDs of major AGIs
- Equipment
  - Assess a range of technology concept solutions with consideration to the availability of Commercial off the Shelf technology (COTS).
- AGIs
  - Assess the utility load demands for the AGIs
  - Identify the spatial requirements for the AGIs and advise on the functional/operational requirements at the boundary.
- Drawings
  - Route Map
  - AGIs layouts
  - Typical Crossing drawings
  - Tie-in Drawings
  - P&IDs
- Pipeline Reports
  - Routing Study
  - Crossing Report and Schedule
  - Mechanical Design
  - Material Selection
  - Topographical and geotechnical Survey Scope
  - Fitness for Purpose Assessment of Existing LTS Pipelines

Preliminary Planning, Consenting and Environmental Plan

Informal discussions with key stakeholders such as regulatory bodies, local municipalities, national agencies or other targeted consultations as required will be initiated to better understand the requirements and risks to successful approvals. Landowners will not be approached at this stage.

The planning and consultation strategy and roadmap will be updated based on the refined pre-FEED and any additional assessments or activities undertaken, and a preliminary plan will be developed.

Technical HSE/Workshops

Carry out HAZID/ENVID/Preliminary HAZOP, Risk, Routing & Constructability workshop(s) to consider:

- Excursions outside normal operating parameters
- All phases from construction, O&M to decommissioning

Key aspects include review of processes where loss of containment may occur in the distribution of hydrogen

- Identify failure modes that could lead to loss of containment
- Assess risks of the likelihood of failure mode occurring and the severity if failure mode occurs

- Determine controls including adapting the design to remove hazard and designing in safety features
- Identify consequences of loss of containment and mitigation measures to detect and deal with a loss of containment
- Identify safety critical assets, controls and mitigations

Wood will review the requirements of the Safety Case and prepare a document outlining the Safety Case considerations to be further addressed during FEED.

Construction, Logistics and Temporary Facilities Study

Review the constructability, logistics and testing of the pipeline and AGIs and hold a constructability workshop with SGN to present the results of the study. The temporary facilities requirements shall be assessed and locations of the construction compounds and laydown areas will be identified.

Survey Scope of Work

Prepare a scope of work for the topographical survey, geotechnical investigation, soil resistivity and underground detection survey activities for key areas/major crossing locations. Obtain pricing from survey contractors and perform a technical bid evaluation of the received quotations.

2. Feeders Sensitivity Analysis

A sensitivity analysis shall be included for the utilisation of the NTS feeders using new offtakes and LTS pipelines.

- Flow Assurance: Sensitivities to include Feeders 10 and 13 for both steady state and packing/unpacking
- Flow Assurance: Fluid composition review and characterisation update
- Routing: Route to/from Feeders 13/10
- Pipeline: Tie-in design/drawings to Feeders 13/10

The following deliverables shall be updated to consider this sensitivity;

- Fluid characterisation report (previously included in the steady state report). The steady state and the packing/unpacking technical notes will include the Feeder 13/10 sensitivities.
- Additional Feeders 13/10 tie-in drawings
- Most of the additional routing work for Feeders 13/10 will be included in the Routing Report.

3. Below 7 bar analysis

Phase 1

This will establish and agree the way of working, lines of communication, the methodology and the boundaries of the study. The output will be a short document summarising what has been agreed.

- An overall philosophy for the conversion including timescales and the time that customers could be without gas. The workforce availability and time that consumers could be without gas will enable the size and hence number of conversion sectors to be evaluated - this will be critical to price certainty for the FEED.
- Definition of the factors that affect the selection of the statistically representative area, including reference to other hydrogen studies to determine issues of concern i.e. pipe materials, age of properties, MOBs, range of I&C premises.
- The scope and timings of the hydrogen feed configurations to achieve both hydrogen blend and hydrogen conversion
- High level network conversion strategy based on network and hydrogen feed configuration (intention network schematic)
- Critical factors which will lead to a successful FEED study. I.e. from the above details the sensitivities, FEED Philosophy, scope, work methodology, design and engineering, design review, HAZOP, project plan, Front End Design Package and Engineering, Procurement Construction processes and documents.

Phase 2

Phase 2 will proceed once DNV, SGN and Wood Group agree on all the parameters that could impact on cost certainty for the FEED study with a focus on operations downstream of the TRS.

- A high-level study of the whole Aberdeen network to understand current natural gas and future hydrogen demands and supplies (network entry points).
- The output from this section will cover supply / demand matching requirements over the duration of the conversion project (build up year on year and variation over the year).

- Establish how many weeks in the year it is feasible to undertake consumer conversion activities – for example, previous studies (such as H21) have recommended 26 weeks centred on the summer period.
- Analysis of typical weather patterns and demand in Aberdeen using data from previous years to confirm whether the 26-week period needs to be shortened or whether it can be lengthened.
- A study to determine a statistically representative area of Aberdeen that will be the focus of a detailed study for the pre-FEED. The results from the small representative area will be multiplied up to deliver accurate costs for FEED for the entire conversion area. The representative area will consist of 10 sectors (number of domestic / non-domestic consumers to be determined in Phase 1) and will include a section of IP/MP pipelines.
- An investigation into the CAPEX/REPEX programme and the impact on the conversion of Aberdeen to hydrogen. This will include cast iron mains still in operations, stub ends, steel pipelines, service replacement and vulnerable locations (large diameter city centre mains). This study will influence the timings and sequencing ordering of both conversion and CAPEX/REPEX activities including the requirements for reinforcement.
- Risk Assessment appropriate to the pre-FEED stage of the project, following the IGEM/G/7 approach. This would include Identification of key knowledge gaps which will need to be addressed to support FEED stage QRA (for example MOBs) and identify the methodology to be used for the FEED QRA
- A study of the options for new hydrogen infrastructure in Aberdeen including new hydrogen LTS pipelines linking the Dolphyn Project, other green hydrogen supplies and the blue hydrogen supplies from St Fergus and an additional PRS. The additional PRS could be useful to support the Aberdeen City 7 bar network and future conversion of other areas such as Peterculter, Maryculter and Westhill. A high-level study and narrative on whether an interim 20% hydrogen blend step prior to full hydrogen conversion could facilitate decarbonisation and reduce the costs of conversion in Aberdeen
- The impact of loss of diurnal storage in the existing 7 bar system due to the lower energy density of hydrogen. We would assess whether the new 7 bar hydrogen LTS would provide sufficient additional diurnal storage if there is a shortfall using the repurposed LTS pipelines

Phase 3

Phase 3 will detail the contents and scope of the FEED study based on the findings of Phases 1 and 2. This will involve close collaboration and iteration with the upstream study including the siting of the TRS sites and the entry points of hydrogen

Network modelling on the statistically representative area to develop a sector conversion plan that can be multiplied up for the full Aberdeen network
The output from this study will give a sector-by-sector conversion plan, with sector specific build up drawings including valves, purge points, reinforcement, etc enabling a sector cost estimates to be developed that can be multiplied up for the full network.

Definition of each stage of the FEED study and develop a price against each component
The overall price for Aberdeen will be based on the findings of the statistically representative area. There will be some elements that will be common to the whole of Aberdeen such as stakeholder engagement, the operating philosophy and demonstrating safety during and post conversion.

We will also discuss the merits or otherwise of including blending up to 20% hydrogen as a precursor to full conversion of Aberdeen area

Phase 4

Phase 4 will include all reporting of the outputs and outcomes.

We will combine the FEED prices prepared by Wood Group for the high-pressure section of the network with the prices for the <7 bar system. The FEED price will be generated using standard pricing methods that have previously been acceptable to Ofgem
A high-level price (±50%) will be estimated for the delivery phase of Aberdeen conversion using an economic model previously developed for similar projects

Objective(s)

The outputs of the study are to provide Pre-FEED analysis to support the application of funding for Net Zero Pre-Construction Reopener and net Zero Reopener mechanisms. Outputs will include several key stage gate reports, route drawings assessments of overall project execution along with an accurate estimate of costs to enable SGN to secure further funding for the FEED study.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

Not applicable

Success Criteria

The success criteria are as follows:

- Transmission assets
  - Phase 1 deliverables
    - Preliminary Pre-FEED Report;
    - Basis of Design;
    - Network Hydraulics Analysis – Technical Note;
    - Preliminary Network PDFs (major AGIS only);
    - Pipeline Design, Materials and Routing Deliverables including automated route optioneering and workshop;
    - Routing, Risk and Constructability Workshop (with Client) and report;
    - Preliminary AGI Layouts;
    - Preliminary FEED scope and budget estimate;
    - Overall Project Schedule – Level 2;
    - Overall Project Cost Estimate – Level 5;
    - Permitting Roadmap Schematic;
    - Project Management deliverables incl. Weekly Progress Dashboard, Registers (Risk, Action, Change etc.), Master Deliverables Register, Project Execution Plan (incl. QHSE plan).
  - Phase 2 deliverables
    - Pre-FEED Final Report;
    - Basis of Design;
    - System Philosophies (Process, Pipeline, HSE, C&I/Telecoms, Electrical)
    - Blowdown Study;
    - System PFDs and preliminary Network P&IDs (major AGIS only);
    - Pipeline Routing Study Final Report for selected corridor;
    - TOR and Workshops incl. HAZID/ENVID, preliminary HAZOP, risk and constructability
    - workshops (withClient) and report;
    - Pipeline Materials and Design Deliverables
    - Piping Layouts Drawings
    - C&I/Telecoms and Electrical Block Diagrams and SLDs
    - Technical HSE Hazardous Area Drawings
    - FEED scope and budget estimate;
    - Overall Project Schedule – Level 3;
    - Overall Project Cost Estimate – Class 4;
    - Permitting Roadmap Schematic;
    - Preliminary Land Plans;
- Feeders Sensitivity Analysis
  - Fluid characterisation report (previously included in the steady state report). The steady state and the packing/unpacking technical notes will include the Feeder 13/10 sensitivities.
  - Additional Feeders 13/10 tie-in drawings
  - Most of the additional routing work for Feeders 13/10 will be included in the Routing Report.
- <7bar system
  - Phase 1 interim report outlining the methodology and the boundaries of the study.
  - Phase 2 interim report which defines the statistically representative area(s) of Aberdeen and the conversion strategy
  - Phase 3 interim report which will describe the detailed study on the statistically representative area(s)
  - Phase 4 final DNV report which will build up the price for the FEED study using the information generated in phase 3 and combined with similar costs developed by Wood Group for the hydrogen transmission system.

Project Partners and External Funding

Wood, DNV and External Funding-Network Innovation Allowance (NIA)

Potential for New Learning

The project will provide key learning on the considerations for routing of new pipeline infrastructure to support network decarbonisation to hydrogen. It will also identify the pipeline specifications required to support hydrogen production from an Auto thermal Reformation Unit and also allow for expansion of the system to facilitate conversion of early adopters and transport hub connections to 100%

hydrogen. The project provides the basis for the conversion of the North East of Scotland to hydrogen and subsequent development to the central belt of Scotland with the aim of meeting Scotland's interim climate targets of 1million homes to low carbon heating by 2030.

Scale of Project

The project will be a combination of desktop study, stakeholder engagement and surveys of the proposed pipeline route.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL3 Proof of Concept

Geographical Area

The project will provide a detailed Pre-FEED analysis of the pipeline route for further FEED analysis and construction.

Initial optioneering analysis from the North East Coast and Industrial Cluster project has identified an onshore transmission route as the principal method for routing of the main hydrogen transmission pipeline along the North East Coast of Scotland.

The project will establish a critical hydrogen distribution route to support conversion of the network to hydrogen from existing natural gas and support Scotland's interim climate targets of 1 million homes to low carbon heating by 2030.

Revenue Allowed for the RIIO Settlement

Not applicable

Indicative Total NIA Project Expenditure

£1,018,810

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:

Significant decisions on the future UK heat policy are expected from Government in 2025. Evidence to influence Heat Policy ahead of this is of critical strategic importance. Following on from our Aberdeen Vision and regional North East Coast and Industrial Clusters projects, construction of a dedicated hydrogen transmission pipeline will connect the 10MW Dolphyn hydrogen project and the 200MW Acorn Hydrogen project scheduled to be commissioned in 2024/5 and 2025/26 respectively to customers in Peterhead and Aberdeen City. Additional PRS's and 7 bar spur pipelines will also be constructed and routed across the city to facilitate early conversion of industrial adopters and transport connections to 100% hydrogen supply and future conversion of the network to 100%.

Initial optioneering analysis from the North East Coast and Industrial Cluster project has identified an onshore transmission route as the principal method for routeing of the main hydrogen transmission pipeline along the North East coast of Scotland. The Pre-FEED analysis will be critical in supporting conversion of the North East of Scotland to 100% hydrogen and stimulating a hydrogen economy.

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

Not applicable

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)

Not applicable

Please provide a calculation of the expected benefits the Solution

Not applicable

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

The potential outcomes of this project are applicable across GDN's. All the Network Licensees are aiming to reduce carbon emissions through transition to hydrogen. The project will provide a robust framework that GDN's can utilise to convert operating areas to hydrogen and ensure security of supply for downstream commercial and industrial gas users.

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

Not applicable

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 Pre-FEED analysis is a study that can be utilized by all other Network Licensees. The project will illustrate all requirements and considerations for the construction of a dedicated hydrogen pipeline to support decarbonisation of the network. The learnings from the project can be disseminated and used to potentially support connection of other hydrogen projects such as H21 and HyNet to the arterial hydrogen pipeline in subsequent stages of development. The project findings will also inform Network Licensee's on the methodology required for calculating pipeline design specifications to convert early adopters to 100% hydrogen.

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

Not applicable

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 project is specific to developments of SGN North East Industrial Clusters and Aberdeen Vision projects. The scope has been reviewed against all existing projects and no areas of duplications have been identified.

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

Not applicable

Additional Governance And Document Upload

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

The project aims to develop plans for dedicated hydrogen transmission and distribution pipeline systems to support conversion of the network to hydrogen. This forms a critical element of SGN's Pathway to decarbonisation.

Relevant Foreground IPR

Not applicable

Data Access Details

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 is developing a dedicated hydrogen transmission route along the North East Coast of Scotland to stimulate the conversion from natural gas to hydrogen and support decarbonisation of the network. 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 licenses. The development of a dedicated hydrogen transmission route involves potentially significant technical risks. The project will address all considerations and requirements to allow for the transport of hydrogen and delivery to end users, converting from existing natural gas supply.

This project has been approved by a senior member of staff

☑ Yes