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 2022

Project Reference Number

NIA_CAD0086

Project Registration

Project Title

Hydrogen Village - Property Market Evaluation

Project Reference Number

NIA_CAD0086

Project Licensee(s)

Cadent

Project Start

November 2022

Project Duration

0 years and 6 months

Nominated Project Contact(s)

Catharine Skinner

Project Budget

£150,000.00

Summary

The UK Government's Ten-Point Plan targets the need for a hydrogen village by 2025. To successfully deliver a hydrogen village trial we need to fully understand the implications a hydrogen trial would have on the property prices, mortgages, attitudes toward renting and buying properties connected to Hydrogen and property insurance policies and prices. This project provides a unique opportunity to explore the impact hydrogen conversion will have on the property market within the two proposed village areas of Whitby and Redcar. By identifying and engaging with key stakeholders we will be able to bring an expert and informed view to policy discussions and further support the next phases of the Hydrogen village project and other subsequential hydrogen projects.

Third Party Collaborators

Gemserv

Nominated Contact Email Address(es)

Innovation@cadentgas.com

Problem Being Solved

The UK has mandated that it shall reach Net Zero emissions no later than 2050. The UK was the first major world economy to set this target and it shows the UK's commitment to tackling climate change for future generations. This mandate has put the UK on an accelerated programme to reduce emissions across our entire society whether this is industry, transport, agriculture, or the way we create our power and heat our homes. To achieve Net Zero by 2050 will require a co-ordinated effort across the whole of the economy and by individuals who will be required to make technology choices and potentially change habits and behaviours to live more sustainable lives.

The government has set out its ambition to support the start of a 100% hydrogen village trial by 2025. The trial will gather the evidence required to help government make a policy decision in 2026 on whether hydrogen will be transported through the existing gas network, to decarbonise heat in buildings.

As part of Ofgem's Project Direction to both NGN and Cadent there is a requirement to design an approach that protects the people (stakeholders, residents and businesses) in the villages. BEIS have set out a "customer policy" which includes giving clarity on the impact a transition to hydrogen would have on the property market.

To date, there has been no hydrogen trial planned or delivered at the scale of the hydrogen village. As a consequence, the implications on mortgages, for renting a home during the trial, buying and selling properties, house insurance and house prices have not been fully and comprehensively covered. This project looks to look at all these areas in detail so that they can be articulated to the consumers within the village.

Method(s)

This project will be led by Cadent and principally by Cadent's Research and Engagement team. Cadent are experienced in conducting consumer research and engagement and have accumulated experience on hydrogen projects such as HyDeploy and HyDeploy2. Expert engagement partners will be appointed to deliver the research. The project will follow a rigorous project management framework to ensure that the project remains on track, its outputs are of a sufficient standard, the material and planning for the project's next stage is undertaken and is fully aligned with RIIO-GD2 funding mechanisms.

This project will be undertaken in 3 stages

· Stage 1 – complete a comprehensive and detailed study; consolidate existing research and identify key stakeholders to create a stakeholder map.

· Stage 2 – build upon the literature review with qualitative interviews from key stakeholders and produce an impact analysis report.

· Stage 3 - Provide the recommendations and mitigations.

The Measurement Quality Statement and Data Quality Statement include the fact that there will be expert engagement partners and one network licensee involved in the project who will constantly measure the quality output of the project. Expert engagement partners will be required to have their own quality assurance process in place. This will also be reinforced and further scrutinised by the project management board, which will compromise of a number of experienced gas industry professionals and engagement specialists who will regularly monitor the output of the project. There is also expected to be a regular interface with the BEIS hydrogen trials team, through the HyNet Homes (Technical Research) project, who will have full access to the documents available and will be able to provide comment.

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.

Scope

Cadent and NGN have commissioned an expert engagement partner who will be able to assimilate information for both Cadent and NGN to establish the impact the hydrogen transition could have on the following (this information will also be shared with the other gas distribution networks):

· Impact on property rental prices

· Availability and cost of mortgages

· Ease of buying and selling properties

· Ability to find new tenants

· Changes in availability and cost of house insurance

The initial scope of the project will be a literature review for comparable examples to hydrogen village conversion and evaluation of the drivers in the above policies/ procedures to create a fact base for all areas listed above. This fact base will consider National sources and be available for all gas network providers (GDNs). In addition, a key stakeholder map will be produced to ensure there is focus on the main players in the above areas (with a consideration of the stakeholders that may be particularly relevant to the residents and businesses of Whitby and Redcar e.g., landlords and mortgage/insurance providers, as well as national stakeholders - acknowledging the benefit in engaging with national stakeholders particularly in relation to providers of finance or insurance.)

Once the fact base has been created the second phase of the project will be to engage further with the key stakeholders to obtain qualitative data on the hydrogen transition with primary research through interviews and workshops with these key players. This will enhance the data from the literature and ensure that conclusions drawn have been validated, with potential knowledge gaps filled.

The data generated from both processes will be used to inform a relative impact analysis, for each of the areas listed above, in transitioning to hydrogen. Conclusions drawn will also consider the various trial phases (i.e., some areas may have a different impact at trial stages 3, 4, 5 and only under certain assumptions on the post-trial decisions see below).

The final stage of the project will be to design a set of recommendations, tested with stakeholders to mitigate any issues found that impact the property market. The recommendations will have an indicative costing and relative ease of implementation and will include if consumer compensations are required (with indicative costings). The recommendations will focus on conclusions for the trial areas (Whitby and Redcar), once again considering the various stages of the project and the post-trial scenarios as shown below.

(i) During the trial (Stage 3- 5 onwards) and the potential reversion back to natural gas at the end of the trial

During the trial with a heat policy decision that support the transition to hydrogen for heating for the rest of the UK but factors in that this will take 15-20 years (i.e., small numbers of properties are on hydrogen initially)

Objective(s)

This project aims to establish the impact on the property market of converting residential properties from natural gas to hydrogen. This project will give consideration to the impact on property rental prices; availability and cost of mortgages; ease of buying and selling properties; ability to find new tenants; and changes in availability and cost of house insurance.

The objectives of the project are to answer the following questions:

- Are there any other technology transitions that have had an impact on house prices and insurances?

- Is the EPC rating of the home the most important consideration for house evaluation and rental? What is the impact of having a “U” rating?

- For insurance what are the risk drivers for creating premiums and how could these be impacted by changing the energy source to hydrogen?

- Does existing insurance consider the historical data for incidents relating to gas?

- Who are the key decisions makers in property valuation and insurance?

- What may be the key standards that need to be achieved?

- Are perceptions of hydrogen important for certain groups? Customers and insurers, estate agents.
- Will the hydrogen trial stop home moves or not be a factor at all?
- What would be the best way to communicate that there is a trial going on in the area/house to potential new homeowners?

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

There is no impact of this project on consumers in vulnerable situations. This study is either desk-top or interfaces with stakeholders who may represent customers in vulnerable situations but does not interface directly with vulnerable customers.

Success Criteria

Delivery of the following within the agreed timeline to support Cadent's and NGN's Hydrogen Village submission in March.

Considering the impact the hydrogen transition could have on the following areas:

· Property rental prices

· Mortgages

· Buying and selling properties

· Ability to find new tenants

· House insurance policies and prices

This project will deliver

· Literature review and driver analysis (in each area)

· Stakeholder map for the categories outlined (in each area)

· Qualitative data from interviews with key stakeholders

· Impact analysis (relative cost impact in each category where appropriate)

· Recommendations on mitigations with high level cost. This should include a recommendation for the FAQs for consumers prior to conversion in stage 3 (as this question is being asked in the early engagement phases. Therefore, we believe having a robust evaluation will enable us to support customers effectively).

Also, to support the overall objective of creating a customer protection principle that can be funded and communicated by GDNs and BEIS to end consumers to give confidence in their protection during any trial.

Project Partners and External Funding

The project partners are:

Cadent Gas Ltd (Lead GDN)

NGN (Collaborative GDN)

Potential for New Learning

We aim to learn about the key drivers in the property and insurance markets. In addition to understanding the main stakeholders who influence the decisions made in these sectors. The results of the learning will be obtained through the reporting of the project deliverables. The project results will be disseminated to all GDNs so they can be used for any subsequent hydrogen projects.

Scale of Project

The project is a desk-based study and therefore is of sufficient scale to understand the implications of the hydrogen trial on consumers property and insurance markets.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL2 Invention and Research

Geographical Area

The literature and stakeholder review will be national. The stakeholder interviews will deep dive focus into the trial areas of Whitby Ellesmere Port and Redcar.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

Externals: £120000.00

Internals: £30000.00

Total: £150000.00

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:

We need to show that we protect all customers when they are in the trial area. This project shows due consideration of the industry in our work within the home. Being customer centric is critical to the adoption rates of new technology and applies to creating advocacy for hydrogen for home heating.

This research will provide insight needed to trial a hydrogen village as described in the Government's Ten-Point Plan and enable widespread hydrogen deployment in the UK.

In a net zero society, natural gas will no longer be combusted for heat as it emits CO2 which can accelerate climate change, as a result alternatives must be found to natural gas and one of these options could be hydrogen subject to its safe transportation and utilisation being adequately demonstrated. This project looks at the impact hydrogen conversion will have on the property market.

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

There will invariably be consumers in the trial location who are in vulnerable situations, this project aims to protect those consumers by ensuring that there is not a negative impact on their homes when it comes to remortgaging, insuring, buying, or letting their properties.

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

This project includes the creation of a stakeholder map looking at main players in the property markets in hydrogen village regions of Whitby and Redcar specifically, as well as considering national stakeholders. These stakeholders will then be categorised using an influence/interest matrix. This can that be used to replicate in other regions in GB.

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

N/A

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

Currently Cadent and NGN have been funded to take part in Stage 2 of the Hydrogen Village project, with the potential to convert a village in their networks to hydrogen by 2025. This project and associated outputs can be used by both Network Licensees to start building options for consumers, developing levers and potential incentives. This research can also be used by all Network Licensees to understand the impact a transition to hydrogen would have on the property market, as all network licensees will potentially be converting their networks to 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)

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.

Cadent and NGN are currently the only GDNs to be taking part in Stage 2 of the Hydrogen Village project. This property research is tied to the Hydrogen Village project and is being carried out with NGN in collaboration as the outcome can be used by the gas industry. This is a first of a kind project in respect of Network Licensees' with regards to developing a hydrogen village.

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

The Government's Ten-Point Plan has given the need to develop a hydrogen village and hydrogen town. The technology development curve for hydrogen is now at the point where a hydrogen village is required to demonstrate hydrogen at scale, this can then inform subsequent policy decisions which must be taken on heat in the mid-2020s.

To successfully deliver a hydrogen village trial we need to fully understand the implications of a hydrogen trial would have on the property prices, mortgages, attitudes toward renting and buying properties connected to Hydrogen and property insurance policies and prices. This project is innovative and should not be viewed as BAU due to the reason it has never been considered before. This project should be viewed as a fundamental step in developing a suitable hydrogen village proposition, therefore is entirely innovative.

Relevant Foreground IPR

This project and the resultant outcomes/deliverables will conform to the default treatment of IPR as set out under the agreed NIA Governance (where the default requirements address two types of IPR: Background IPR and Foreground IPR).

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

This project will understand the impact a transition to Hydrogen would have on the property market. The project will be vital to the success of a hydrogen village conversion to be developed by 2025, as per Government directive. The success of this project will move the boundaries of the gas industry, the Future of Gas programme of work is bespoke and a strategic investment that take the gas industry beyond business as usual.

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 project conforms to NIA requirements. There are a number of commercial risks to overcome to enable transition to a hydrogen network, which are under consideration by Government. Therefore, any network licensee would struggle to justify related investment. Support in the short term under NIA will allow essential work to be completed to understand the impact on the property market as a result of hydrogen as an energy solution. This is a unique piece of work and is essential to developing a hydrogen village trial. Enabling transition to a low carbon future is commensurate with NIA and therefore can be supported.

This project has been approved by a senior member of staff

☑ Yes