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## NIA Project Registration and PEA Document

### Date of Submission

Jul 2022

### Project Reference Number

NIA\_CAD0078

## Project Registration

### Project Title

FI-0017 - Exit Strategy Mechanism

### Project Reference Number

NIA\_CAD0078

### Project Licensee(s)

Cadent

### Project Start

April 2022

### Project Duration

1 year and 0 months

### Nominated Project Contact(s)

Marc Clarke

### Project Budget

£150,000.00

## Summary

This project will look at the co-dependencies and consumer attitudes of the exit strategy mechanism from the Hydrogen Village project at the end of the trial period. It is unlikely that a finalised position can be reached in 2022 on what the preferred exit strategy should be but a clear steer to enable engagement within the hydrogen village community should be identified and then a process agreed for reviewing this position in-light of further developments should be detailed.

### Nominated Contact Email Address(es)

Innovation@cadentgas.com

## Problem Being Solved

The Prime Minister's Ten Point Plan for a Green Industrial Revolution set out the government's intent to explore the option of hydrogen to be used within the current gas network infrastructure. It specifically mentioned that a Hydrogen Village trial should be underway no later than 2025 to enable an important policy decision to be made in 2026 on the options for heating homes in a net zero future.

As part of the engagement with consumers on the chosen trial locations, we need to have a very clear understanding of what the exit strategy mechanism approach should be now, as we engage with consumers for this first time, and how this may need to be adapted as the project continues forward assimilating new information materialises and moving towards the trial phase.

The exit strategy will need to be underpinned by the consumer, hence they are central to this project. However, consideration will also need to be given to technical, safety, economic and regulatory aspects to ensure that the optimum exit strategy mechanism is eventually selected and agreed upon by key stakeholders.

This project is one of the GDNs collaborative projects undertaken as part of the ENA's hydrogen village co-ordination group.

## Method(s)

This project will rely on several methods to identify the preferred approach for the exit strategy mechanism for the initial dialogue with consumers on the trial location in 2022 and how this can be further built on in the coming years as the project develops and the energy policy landscape invariably moves forwards to.

The project will use the following methods:

**SWOT analysis:** The initial phase will involve looking at all the relative strength and weaknesses of all known exit strategy mechanisms. An agreed framework for assessing the various exit strategies will be agreed to and then an assessment will be undertaken.

**Consumer Groups:** Will be at the centre of the project. It is important that consumer groups are able to feedback on their thoughts with regards to the various exit strategy scenarios so that adjustments can be made as necessary to reflect consumer insights.

**Stakeholder engagement:** Stakeholder engagement will happen throughout the project to ensure that all the facts are considered, and any key information is included within the analysis. Stakeholders engaged will be from both from the public and the private sector. This will be supported by the ENA through their existing gas stakeholder groups.

**Economic and Technical analysis:** There will need to be a strong element on technical and commercial analysis to support the methodologies described above. Experts in these areas are going to be contracted into the project and will work alongside the GDNOs ensuring that the information being inputted into this analysis is correct and

**Measurement Quality and Data Quality** will be supported by hiring professional organisations in to support the GDNOs on the project. Much of the work will be based on consumer perception so it is important that a representative population is used to reflect all possible views that could emerge.

## Scope

This project is undertaken in 4 phases, which are:

**Phase 1:** This first phase will involve looking at all the possible scenarios for exit plan. These should be taken directly from the GDNs inputs into the BEIS/Ofgem proforma and any further exit strategy scenarios as identified by the team.

Once all possible scenarios have been identified, a Strengths, Weakness, Opportunities and Threat (SWOT) analysis should take place alongside consumer groups to identify the preferred scenarios and to discard the scenarios that do not work, with clear reasoning given as to why they are being discarded. When undertaking the SWOT analysis there should be an agreed criterion that the different options are being selected against to ensure a consistent approach is used. This selection criteria should be shared ahead of the SWOT analysis and consumer groups taking place with the GDNs, ENA and key stakeholder groups.

**Phase 2:** Once the SWOT analysis and consumer group feedback has been completed in Phase 1, Phase 2 involves taking 2 (or possibly 3 if necessary) of the preferred scenarios, scored against a clear selection criterion, and working these up in further detail. It is likely that 'weighting factors' are added to the selection criteria, this will ensure that an objective way of down selecting scenarios is presented. This filter is likely to be a desk top based and done by the immediate project team to ensure that it can occur in a timely manner.

Once 2 (or 3) exit mechanism options have been selected and the different considerations compiled against each one a final preferred scenario should be selected. This again should be selected from a pre agreed criterion that is agreed on by the GDNs, the ENA and any other stakeholders whose input is deemed important. If a single scenario cannot be selected, for whatever reason, then the reason for this needs to be made clear and well understood by all GDNs. The single scenario will be selected via a workshop with other GDNs and relevant stakeholders all inputting into the decision.

Phase 3: In phase 3, thorough analysis will take place on the preferred exit strategy and this can also be shared with BEIS/OFGEM for their feedback and hopefully eventual agreement. Once BEIS and Ofgem are content it will also be worth holding small consumer group research to ensure that the people who are representative of the people we are engaging with in the trial are exposed to the exit scenario to get their opinions.

Phase 4: It is important that at pertinent stages within the Hydrogen Village projects that the exit strategy is reassessed as further technical, economic and consumer feedback information improves. As part of the project it will need to be identified when a final decision will need to be made and presented to Ofgem/BEIS for funding.

## **Objective(s)**

The objectives of the project are as follows:

- Develop an exit strategy mechanism for initial consumer engagement
- Develop a clearer understanding of all the potential exits strategy mechanisms
- Identify what exit strategy mechanism could potentially be used in the future and identify what co-dependencies need to be resolved to enable these exit strategies to materialise
- Can a detailed understanding of consumer positions and how this is reflected in exit strategies
- Understand who and when exit strategy needs to be reviewed and when a final decision needs to be made and articulated to stakeholders and consumers

## **Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)**

This project will consider whether there are any specific impacts of consumers in vulnerable situations from the work undertaken. Should any negative impact be identified then further work must be initiated.

## **Success Criteria**

The success criteria for the project is the delivery of the following;

- Agreed exit strategy to engage with consumers when initial conversations take place on the hydrogen village location
- Clear identification of leading exit strategy options and the co-dependencies which need to be overcome to enable a preferred exit strategy to materialise
- Clear understanding of how the exit strategy will go through constant review and then potentially change when further considerations can be made
- Position the consumer and their thoughts at the centre of the project

## **Project Partners and External Funding**

The project partners are:

Cadent Gas Ltd

SGN

NGN

WWU

## **Potential for New Learning**

So far, only a minimal amount of work has been done on exit strategies as part of

## **Scale of Project**

The exit strategy will be considered as part of the Village Hydrogen Trials potentially located in the North West and North East of England.

### **Technology Readiness at Start**

TRL2 Invention and Research

### **Technology Readiness at End**

TRL3 Proof of Concept

### **Geographical Area**

Desktop based project covering the mainland UK geography and most notably the potential hydrogen village locations in the North West and North East of England.

### **Revenue Allowed for the RIIO Settlement**

N/A

### **Indicative Total NIA Project Expenditure**

External funding to suppliers: £112.5k

Internal funding : £37.5k

Total funding: £150k

## 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:

This project is a vital enabler to the Hydrogen Village, which has a considerable benefit in facilitating the energy system transition.

#### 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)

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 intention is for this project to be relevant and therefore replicable to all hydrogen village trials.

#### 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

The learning can be used by any network that intends to do a hydrogen village trial or built upon by any network that intends to do any subsequent trials.

### 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.

There is no previous work being undertaken in this area due to the novel nature of the 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

This project is a vital enabler for the Hydrogen Village trials which is a highly innovative programme that has not been replicated anywhere else in the world to date. This project has been initiated as part of the collaborative projects agreed by BEIS and Ofgem ahead of the project commencing.

### Relevant Foreground IPR

All relevant foreground IP created as part of the project will follow NIA governance

### Data Access Details

Current expectation is that all data used in this project will be sourced from published documentation, the test cases will be available upon request.

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 Innovation website at <https://cadentgas.com/future-of-gas>
- Via our managed mailbox [futureofgas@cadent.com](mailto:futureofgas@cadent.com)

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

The hydrogen village projects and any of the associated enabling projects, cannot be considered as BAU due to their first of a kind nature and risks which go beyond BAU.

**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**

This project has inherent risks due to its first of a kind nature so it is right it should be supported using NIA funding.

This project looks to uncover commercial, technical, operational and regulatory considerations when uncovering the preferred exit strategy.

**This project has been approved by a senior member of staff**

Yes