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

Nov 2022

Project Reference Number

NIA_CAD0085

Project Registration

Project Title

Easy Assist Remote Actuation

Project Reference Number

NIA_CAD0085

Project Licensee(s)

Cadent

Project Start

November 2022

Project Duration

3 years and 2 months

Nominated Project Contact(s)

Innovation@cadentgas.com

Project Budget

£578,082.00

Summary

The Remote Activation will be a complementary device specifically and uniquely designed to be installed with the EasyAssist™, NIA Project NIA_CAD0063, developed by Oxford Product Design. The Remote Activation shall be installed in the homes of domestic gas customers where the situation warrants additional accessibility. It will provide a connected triggering method for the EasyAssist™ up to 2m away from the ECV.

The Remote Activation Pack places an additional STOP method away from the EasyAssist™ ECV. The ultimate function is the same – assisted closure of the ECV. The action of triggering this product, defined as remote activation, acts like pressing the button on the EasyAssist™, which in turn triggers the mechanism and closes the ECV.

Preceding Projects

NIA_CAD0063 - Easy Assist ECV Phase 2

Third Party Collaborators

Oxford Gas Products Limited

Nominated Contact Email Address(es)

Innovation@cadentgas.com

Problem Being Solved

The background to the challenge relates to the Easy Assist Emergency Control Valve (ECV), for domestic customers in vulnerable circumstances. The ECV is actuated or closed, cutting off gas flow in the event of an emergency such as a gas escape or any uncontrolled release. Turning the handle of the ECV 90 degrees makes the situation safe and controlled until an engineer can arrive.

This physical activity is a problem for some of the UK customers listed on the Priority Services Register (PSR). Approximately 2 million people are restricted physically, which could limit their ability to manually operate the current ECV handle.

Therefore a further opportunity to improve the product has been highlighted. The Remote Activation will trigger the Easy Assist from up to 2m from the ECV. This will allow a trigger to be placed in a more accessible and convenient place for people who might have difficulty accessing it otherwise.

Once installed, in an emergency or uncontrolled release situation the customer only needs to press either of the STOP triggers and the ECV will close automatically.

Method(s)

The remote activation will explore the use of mechanical methods to activate the EasyAssist from a distance of up to 2m away. The customer will be able to see the status of the ECV from the remote activation unit. It is envisaged this will be via a tether or cable that will be robust enough to withstand installation in a domestic setting and accommodate multiple activations.

Currently there is no device on the market for this particular use within the gas sector. The nearest similar type of product available is for water (SureStop).

Data Quality Statement

The project will ensure that necessary data is of sufficient quality and readily available to meet the objectives of the project. This will be achieved by providing current relevant PSR data, to enable development to progress in the correct manner.

Measurement Quality Statement

Considerations as to the project's interaction with the current EasyAssist™ will be carried out in stages 1-3 with an interim prototype produced to practically assess the success criteria and ensure that the product is fit for purpose with the EasyAssist™ product developed in the previous NIA Project.

Scope

The overall scope of the project will be broken down into 8 stages, from design through to final product. This will include concept design and final concept definition, which will then be engineered to a state whereby field trials can take place on the Cadent network. The stages are listed below:

- Stage 1 - Specific definition
- Stage 2 - Concept development
- Stage 3 – Concept consolidation
- Stage 4 – Engineering
- Stage 5 – Alpha prototypes
- Stage 6 – Tooling release
- Stage 7 - Manufacturing Support and Beta Prototypes
- Stage 8 – Certification and Field Trials

Objective(s)

Stage 1

- Technical details and review against the current Easy Assist design.
- Assumptions of the situation, location and installation methods to be confirmed.

- Define User Requirements (both resident and installer)
- Identification of all regulatory and standards information that is applicable to this device and how this lines up with the current Easy Assist project plan.

Stage 2

- Mechanical Concept
- User Interface
- Alpha Test specification

Stage 3

- Final concept definition
- Costings
- Alpha Test Plan Draft

Stage 4

- Detailed Engineering of all unique components
- Interim Prototype
- Alpha Prototype Details

Stage 5

- Alpha Prototypes
- Draft manufacturing pack
- Testing Alphas
- Update Design
- Beta Test Plan Draft
- Costings for Production

Stage 6

- Beta Test Plan
- Design For Manufacture (DFM) review
- Jigs and Fixtures Design
- Launch Tooling

Stage 7

- Packaging, Instructions and Labelling
- First off tooling inspection
- Beta Prototypes
- Beta Testing
- Manufacturing Support
- Jigs and Fixtures review and testing

Stage 8

- Prototype Support and Review
- Certification
- G23 Trials

At the end of each stage there will be an end of phase review, to ensure that the project is meeting the objectives agreed by all parties.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

This project has been input into the Consumer Vulnerability Impact Assessment Tool and there are no negative impacts on consumers in vulnerable situations therefore there is no need to take mitigation measures.

Success Criteria

- Designed prototypes must be able to be fitted onto the EasyAssist™ with minimal modifications or additions
- The device must activate the EasyAssist™ ECV and therefore isolate the gas supply
- The device must be user friendly and easier to activate for majority of users
- It must meet all the criteria specified in the User Requirements Specification/Technical Requirements Specification to its assigned level

Project Partners and External Funding

The project partner for this project is Oxford Gas Products Ltd and the project will be wholly funded via NIA.

Potential for New Learning

Utility companies will develop a better understanding of requirements for customers in vulnerable situations when there is a need to switch off the ECV, but due to the customers particular vulnerability, are unable to turn the ECV handle 90°. There is also potential for future incarnations which could utilise technology in the form of an app.

All reports will be published on the ENA Smarter Networks Portal.

Scale of Project

The project will be delivered as detailed and will bring significant advances relating to being able to access and isolate the ECV when there is a need to switch off. This will create a positive impact for Consumers who are in Vulnerable Situations, whereby under current methods, they would struggle to isolate their gas supply in an emergency. If the scale was lessened, it would significantly reduce the benefit consumers would receive from the project.

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

The project is applicable to Cadent's four Networks.

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

Total external costs: £433,562

Total internal costs: £144,520

Total NIA expenditure: £578,082

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:

The EasyAssist™ ECV device is a set of parts that, when assembled on to an existing Emergency Control ball Valve (ECV), will allow the gas customer to close that valve simply and quickly in an emergency. The Remote Activation Pack places an additional STOP method away from the EasyAssist™ ECV. The ultimate function is the same – assisted closure of the ECV. The action of triggering this product, defined as remote activation, acts like pressing the button on the EasyAssist™, which in turn triggers the mechanism and closes the ECV.

The potential solution will enable customers in vulnerable situations, whereby they cannot access the ECV or, if installed, EasyAssist™ mechanism, to switch off the ECV via a remote activation unit attached to the existing Easy Assist. This will not only improve their safety and wellbeing, being able to isolate their gas supply and limit their confusion as to the status of their supply, but will also empower customers to be more independent and safer in their homes.

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

Between Aug 21 and Jan 22, the average costs for reinstatement within Cadent for installing a new meter was £632.32.

The average time to install a new meter is 2 hours and the average cost of a new metre is £238.00

Taking into account labour*, based on the above figures, the average cost to install a new meter and reinstate within Cadent is £888.14

In this same period there were 4155 meter moves, of which 161 were for Customers in Vulnerable situations. Extrapolated, this would mean on average there would 9972 meter moves per year, 386 for Customers in Vulnerable situations.

With the remote actuation device, there are no reinstatement costs.

It is estimated that the average time to install the device is half an hour and the early indictive costs of the device are £26.00 each.

This would mean the average cost to install a remote actuation device would be £30.46, including labour*

Based on the figures above this would mean that a financial benefit of £331,000 per year could be achieved

*Labour costs based on the hourly National Living Wage 2022

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

Project reporting will quantify the scale and cost of the opportunity of implementation taken from this project.

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

Roll out costs are estimated to be £30.46 per unit including labour costs. At the moment, contract discussions in terms of purchasing the product have not taken place. These will be referred to in the closure report, should the project reach a successful conclusion.

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 learnings from this project could be adopted by other Network licenses. However, the cost and methodology to roll this is out have not yet been developed.

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.

A thorough check has been completed and no similar projects have been identified. All networks were informed of the project via a project notification form on huddle and no issues of duplication have arisen.

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

Easy Assist Remote Actuation has not been identified previously across all GDNs and thus makes this project innovative. This device will also be compatible with the EasyAssist™ ECV device, NIA project NIA_CAD0063.

Relevant Foreground IPR

The 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

The aim of this project is to better serve Customers in Vulnerable situations, to ensure they are safer in their properties and are able to turn off their gas supply easily in an emergency situation. As the project commences at research, then the scale of the project has a high level of uncertainty associated with the project, which would be beyond the licensee's risk appetite.

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 high-level risk associated with the project is beyond the current risk appetites of networks. NIA will allow us to complete this project to better inform future decisions and opportunities. It is also looking to achieve one of the two key requirements of NIA in RIIO-2, potentially delivering benefits to customers in vulnerable situations.

This project has been approved by a senior member of staff

☑ Yes