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NIA Project Registration and PEA Document

Date of Submission

Sep 2020

Project Reference Number

NIA_CAD0063

Project Registration

Project Title

Easy Assist ECV Phase 2

Project Reference Number

NIA_CAD0063

Project Licensee(s)

Cadent

Project Start

September 2020

Project Duration

1 year and 7 months

Nominated Project Contact(s)

Rebecca Payne

Project Budget

£215,860.00

Summary

Develop a cost effective solution to be retrofitted to the current ECV which will meet all gas regulations & standards. The device will aid customers to switch off their gas supply in case of an emergency. Considerations to installer requirements which could identify the opportunity for gas safe installation or GDN Engineer installation. This phase will deliver heat actuation, Beta prototypes for field trials and design pack manufacturers to deliver the end solution.

Nominated Contact Email Address(es)

Innovation@cadentgas.com

Problem Being Solved

The Emergency Control Value (ECV) is a mechanism for consumers to be able to turn off their gas supply to the meter in the event of a gas leak and for maintenance of gas appliances. The PSR has identified a large volume of customers who would struggle to operate the ECV, therefore not having the ability to make the property safe whilst awaiting a gas engineer.

Regulations state a ¼ of turn is required from the ECV and gas supply should be noticeably in the off or on position.

Method(s)

The Emergency Control Value (ECV) is a mechanism for consumers to be able to turn off their gas supply to the meter in the event of a gas leak and for maintenance of gas appliances. The PSR has identified a large volume of customers who would struggle to operate the ECV, therefore not having the ability to make the property safe whilst awaiting a gas engineer.

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Scope

It is envisaged that the project will be executed utilising the Cadent change management approach with defined success criteria for each of the phases and deliverables.

The sanction value is to fund design & development. The project comprises of 2 stages and then split between development of heat actuation and the complete device. These stages follow on from the first phase of work (NIA_CAD0042), which developed the product up to alpha prototypes and testing. The project has been successful at identifying the scope and user requirements for the final product. This phase looks at the following:

- Stage 1a - Heat Actuation will consist of concept development, material research & selection and alpha prototype.
- Stage 1b - Device will consist of supplier selection, design modifications, tooling & Beta prototypes.
- Stage 2a - Heat Actuation will consist of Beta prototypes, testing & costings.
- Stage 2b - Device will consist of packaging, creation of guides, testing, certification and field trials.

Field trials will take place across the network and will focus on areas of high volume customer need.

Objective(s)

To develop a cost effective, mechanical device to be retrofitted to any domestic ECV. This device would turn the ECV 90 degrees, in line with policy & regulation. This would allow customers on the PSR database with restricted movement to operate their ECV in an emergency.

The proposed solution shall aim to provide:

- Low cost installation
- Simple, easy operation & instruction
- Device compatible with domestic $\frac{3}{4}$ & 1 inch LP ECVs
- Visibly clear indication of ON/OFF
- Reliable & durable
- Retrofitted & mechanical – no impact on current ECV
- Release & re-set mechanism
- Actuated by heat during a fire
- Reduction in Uncontrolled escapes as opportunity to de-classify would be greater.
- Positive impact on prioritisation of workload within the customer centre.
- Customer safety & well-being – ability to make safe and limit confusion as to status of supply
- Engineer safety – property safe when they arrive on site
- CSAT scores – increase in positive scores

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

A tested, certified, functioning design, compliant with the Project Objectives and the “Gas Safety (Installation and Use) Regulations 1998”, CE-certified and suitable for mass production.

Project Partners and External Funding

Energy Innovation Centre & Oxford Product Design.

The project will be wholly funded by the NIA.

Total cost: £290,446

Potential for New Learning

There exists the possibility for subsequent incarnations or models of the device.

For example;

- Remote actuation
 - non-standard pipe diameters and/or compatibility with unusual handle designs
 - a design for new installations and new properties
 - a design for the visually impaired or those with differing physical impairments
- different orientation of taps . . . etc.

The SME would expect to see potential for ongoing cost reductions and general Supply Chain optimisation.

Scale of Project

The scale of this project will be across all Cadent networks however learnings will inform all Gas Distribution Networks which all utilize

the PSR database to manage their customers who would be in vulnerable situations. The scale of investment in this project is necessary as feasible solutions have not yet been identified to manage ECV control for PSR customers

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL8 Active Commissioning

Geographical Area

This project will be delivered by Oxford Product Design and the Cadent Network.

Revenue Allowed for the RIIO Settlement

No revenue allowed for in the RIIO settlement.

Indicative Total NIA Project Expenditure

Total cost: £290,446

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:

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)

May provide a small operational cost reduction as a consequence of reduced 1-hour emergency work. This however is an improvement aimed at helping customers in vulnerable situations. This benefit should allow these customers to remain self-sufficient in their homes and where gas safety concerns may require additional government social care.

Please provide a calculation of the expected benefits the Solution

Reduction in Uncontrolled escapes as the opportunity to re-classify would be greater. From a sample of data from uncontrolled escapes reported at properties with customers in vulnerable situations (510 reports) 354 ECV were still in the 'On' position and therefore classified as Uncontrolled. This could have been reduced if the Easy Assist ECV was in situ at these properties.

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

All customer networks will have customers in vulnerable situations with this need for Cadent this equates to 0.5 million with mobility constraints and 2 million with more general vulnerability issues.

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

All customer networks will have customers in vulnerable situations with this need for Cadent this equates to 0.5 million with mobility constraints and 2 million with more general vulnerability issues.

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

This is a piece of equipment which will directly impact the operations and will attach on to our network, this is new and not currently available piece of equipment.

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

This challenge fits in with our new innovation strategy for Consumer Vulnerability however many other customers could benefit from this device in the home, due to the inclusion of heat actuation.

- Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

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's no current alternative method of turning the ECV for these customers

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

There's no current alternative method of turning the ECV for these customers

Relevant Foreground IPR

n/a

Data Access Details

n/a

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

The risk for developing this solution is high and especially where there is significant variability around customer installations.

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

Due to the specific nature of the UK customer need, including frequency of use it is not possible to find other commercial funding methods for this work.

This project has been approved by a senior member of staff

Yes