

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

Jun 2019

### Project Reference Number

NIA\_CAD0042

## Project Registration

### Project Title

Easy Assist ECV

### Project Reference Number

NIA\_CAD0042

### Project Licensee(s)

Cadent

### Project Start

June 2019

### Project Duration

1 year and 1 month

### Nominated Project Contact(s)

Rebecca Payne – Innovation Project Manager

### Project Budget

£115,840.00

## Summary

Develop a cost-effective solution to be retrofitted to current emergency control valves and which meet all gas regulations & standards. The solution must aid customers to switch off their gas supply in case of an emergency. The solution should also identify opportunities for public self-installation, gas safe engineer installation or gas network operator engineer installation. This development will deliver prototypes for yard trial testing and before a further phase to field trial the final 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 or dangerous situation. At Cadent we have a large volume of priority service customers who would struggle to operate the Emergency Control Valve (ECV), therefore not enabling them to easily make the property safe whilst awaiting an emergency call gas engineer.

Regulations state a minimum quarter turn is required to isolate the gas supply. This isolation should be obvious and visual to the consumer whilst been noticeably in the off or on position.

## Method(s)

Develop a cost-effective solution to be retrofitted to current emergency control valves and which meet all gas regulations & standards. The solution must aid customers to switch off their gas supply in case of an emergency. The solution should also identify opportunities for public self-installation, gas safe engineer installation or gas network operator engineer installation. This development will deliver prototypes for yard trial testing and before a further phase to field trial the final solution.

## 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 5 stages, the first will gather requirements, stage 2 & 3

will look at concept designs and stage 4 & 5 will develop prototypes & test. Demonstration of solution to be tested by supplier & at Cadent training centres under Operations supervision. No field trials are planned in this stage, a further phase will be required to complete designs, locate & work with a manufacturing companies and field trial.

## 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:

- Installation in less than 10 minutes
- Installation by public or gas engineer
- No impact to supply during installation
- Simple, easy operation & instruction
- Device compatible with all domestic ECVs
- Visibly clear indication of ON/OFF
- Reliable & durable for the life of the ECV
- Retrofitted & mechanical – no impact on current ECV
- Release & re-set mechanism
- Enable customers to easily isolate supply and reduce 1-hour response time to 2 hours
- Customer safety & well-being – ability to make safe and limit confusion with the status of the supply
- Engineer and public safety – property safe when they arrive on site
- Reduction in the number of customer complaints about being able to isolate their supply

## 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 & Willow Innovation

The project will be wholly funded by the NIA.

Total cost: £165,363

## Potential for New Learning

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

For example;

External boxes (Surface mounted and Inset Meter boxes attached to the externals of a property)

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.

The software: Statistical data & analysis, dashboarding & Installation parameters.

## 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

TRL3 Proof of Concept

## Technology Readiness at End

TRL6 Large Scale

## Geographical Area

This project will be delivered by Oxford Product Design and the Cadent Network mainly in the North West Area

## Revenue Allowed for the RIIO Settlement

No revenue allowed for in the RIO settlement.

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

Total cost: £165,363

Plus, future phase to field trial, source & align manufacturing & testing.

## 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 the number of uncontrolled escapes [To be completed from CBA]

#### 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.

To be confirmed through the next phase and once a proof of concept has been tested. We aim to keep the solution to a price point that will allow mass roll out to customers across the UK, including self-installation where possible

### 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

All gas networks have customers living in vulnerable situations. With the PSR 'Needs Code' of 'Restricted hand movement' alone, currently equating to 0.5 million; mobility constraints close to 2 million and the numbers continue to increase with other conditions which may make it difficult for customers to operate the standard ECV currently fitted.

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

There is no specific theme or aim that focuses on customers in vulnerable situations

- 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