

## NIA Project Registration and PEA Document

### Date of Submission

Jun 2020

### Project Reference Number

NIA\_CAD0054

## Project Registration

### Project Title

Methane Alarms

### Project Reference Number

NIA\_CAD0054

### Project Licensee(s)

Cadent

### Project Start

June 2020

### Project Duration

1 year and 11 months

### Nominated Project Contact(s)

Nick Cannon – Project Manager  
Jessica Jarvis – Cadent Engineering Policy  
Scott Wallace – Smart Compliance  
Mary Ryan – MOBs Manager

### Project Budget

£310,489.00

## Summary

MOB40 surveys are completed to meet current legislation and regulations in ensuring pipeline supplies to Multi-Occupancy Buildings (MOBs) are 'maintained in an efficient state'. If the pipe has been deemed un-refurbishable rechecks (leakage surveys) are planned whilst rectification work/replacement is scheduled.

Methane Alarms are a device that can be fitted in a building to monitor atmosphere readings. This equipment will then send an alert upon a positive reading so an Engineer can be dispatched to site and complete the work required. This will allow Cadent to maintain this monitoring regime whilst improving availability of resources for other work.

This work is building on the learnings from the previous NIA project IL502.

### Nominated Contact Email Address(es)

Innovation@cadentgas.com

## Problem Being Solved

MOB40 surveys are completed to meet current legislation and regulations in ensuring pipeline supplies to Multi-Occupancy Buildings (MOBs) are 'maintained in an efficient state'. If the pipe has been deemed un-refurbishable rechecks (leakage surveys) are planned whilst rectification work/replacement is scheduled.

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## Method(s)

A project review session will be completed at the start of this work to review the outputs of the previous project and lessons learnt. This session will also include stakeholders from each stage of the process to discuss the requirements for the equipment and highlight any further development work required.

This feedback shall be built in to the development of the equipment ahead of testing of the equipment to standards (BS EN 60079-29-1-2016) and procedures (IGEM/G/5 and related MOB's documents). The product will also be tested in live field trials to determine usage and application onsite with feedback gathered from the team.

## Scope

Project Scope –

- Cadent Pre-Start Meeting
- Design
- Testing/ Certification
- Field Trials
- Field Trial Report

## Objective(s)

The objectives of this project are to:

- Develop a device that can be used onsite for monitoring the atmosphere and detect gas readings
- Ensure the device is suitable with our systems and processes
- Qualify the device against industry standards and procedures
- Gain approval from Engineering Policy that the device can be used onsite
- Reduce the cost of monitoring buildings for Cadent

Following Engineering Policy approval this will enable deployment of a fully approved solution for monitoring MOB's into the UK Gas Network, without the need for an Engineer to be present onsite.

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

n/a

## Success Criteria

The project will be deemed as a success by:

- Maintaining or improving the safety standards of current work completed on site by and Engineer
- The device passing industry standards and procedures tests
- The device communicates with current and future systems/ processes
- Engineering Policy are satisfied with field trial outcomes to approve the device for usage onsite
- Reducing the cost and time of this process to Cadent

## Project Partners and External Funding

Cadent – 90% of project will be funded by NIA

Project Partner – Smart Compliance

## Potential for New Learning

The results from the project will allow Cadent and other GDN's to determine the usage of this device for this purpose and potential scope for other activities. Early interest shown from Customer team relating to vulnerable customers and potential other monitoring work.

## Scale of Project

This project is to undertake the associated approval/performance testing of Methane Alarms. This work has been proposed to develop a qualification route for Methane Alarms as a fully deployable and Cadent approved solution.

The scale of this project is to develop and test the device to industry standards/ prodedures and trial the equipment in live conditions. This will be carried out over a 13 month period with an expenditure of £310,489 (including 10% contingency)

**Technology Readiness at Start**

TRL4 Bench Scale Research

**Technology Readiness at End**

TRL8 Active Commissioning

**Geographical Area**

Testing will be completed with SGS Baseefa Ltd with development work carried out by Smart Compliance. Field trials will be completed on the Cadent North London area.

**Revenue Allowed for the RIIO Settlement**

No Specific RIIO deliverable output.

**Indicative Total NIA Project Expenditure**

Total expenditure will be £310,489

## Project Eligibility Assessment Part 1

There are slightly differing requirements for RII-1 and RII-2 NIA projects. This is noted in each case, with the requirement numbers listed for both where they differ (shown as RII-2 / RII-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 RII-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 (RII-1 projects only)

The benefits of the project are:

- Health and Safety – responding to changes in site
- Cost – reducing cost of monitoring process
- Availability – improving Engineer availability for other activities
- Customer – minimal disruption to customers with reduced visits to site
- Environment – reduction in carbon footprint of site visits

There is also a potential wider scope for deployment into other monitoring activities with interest shown from Customer Team on activities involving vulnerable customers.

#### Please provide a calculation of the expected benefits the Solution

Current costs - £205,200 per annum for North London network.

Future costs - £72,858 per annum for North London network

Annual saving - £132,341

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

All Network Licensees have Multi Occupancy buildings with Gas riser systems. Therefore this technology could be rolled out across all gas networks in the UK.

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

Costs would be clarified on completion of the projects, however there would be a requirement for a suitable training programme for field engineers and procurement of devices that will be facilitated on a commercial basis, it is envisaged costs dependent on volumes required.

### 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

Project outputs will be shared with other GDN's which will enable them to apply on their own networks.

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

Safety – Improving the safety of our customers by responding to changes in site conditions rather than fixed monitoring regimes

Emergency – Allowing Engineers to be dispatched quickly to changes in site conditions

Maintenance – To improve the way in which we maintain and monitor our assets

- ☒ 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.

Pre-work completed through research and consulting Energy Innovation Centre (EIC) that no other devices are currently in the market.

### 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

Previous work was started on this equipment through project IL502 but was stopped in 2017. Since this work the project has still been deemed innovative as there is no device available that can monitor readings and send an alert to work systems currently in the market.

### **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**

There are risks and uncertainties as to whether this technology is able to pass the required tests and as such does not form part of any BAU process.

### **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**

Currently the risks of the device not working are too great to fund the project without NIA support. This includes potential device failure/ not working correctly and the potential impact of this our customers with MOBs we are monitoring.

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

☒ Yes