

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 2018

### Project Reference Number

NIA\_CAD0031

## Project Registration

### Project Title

PPE Fabric Discovery

### Project Reference Number

NIA\_CAD0031

### Project Licensee(s)

Cadent

### Project Start

November 2018

### Project Duration

0 years and 3 months

### Nominated Project Contact(s)

Cadent Innovation Team

### Project Budget

£25,670.00

## Summary

Research to be undertaken by material engineer from the MTC to look at the use of PPE within Cadent Operations, understand wear ability and the practical needs put on the material. Deep dive approach into other sectors use of PPE and engagement with suppliers & manufacturers of PPE & fire retardant fabrics in order to determine suitability against applications and safety. Considerations against commercial costs and availability.

### Nominated Contact Email Address(es)

Innovation@cadentgas.com

## Problem Being Solved

Personal Protection Equipment (PPE) is worn by all field force operatives with multiple layers required to give adequate protection against the risk of burns and physical injury. Wearing multiple layers during warm weather can be uncomfortable and risk heat stroke to the wearer. Alternative fabrics are available which could improve comfort but whilst also providing the necessary protections required for field force work.

## Method(s)

Research to be undertaken by material engineer from the MTC to look at the use of PPE within Cadent Operations, understand wear ability and the practical needs put on the material. Deep dive approach into other sectors use of PPE and engagement with suppliers & manufacturers of PPE & fire retardant fabrics in order to determine suitability against applications and safety. Considerations against commercial costs and availability.

## 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 research to review available fire-retardant fabrics in the market in order to determine the differences in material properties compared with Novex which is in current use.

The sanction value is to fund research into the following areas:

- Deep dive to review available fire retardant fabrics.
- Review of PPE used by other business areas (i.e. emergency services)
- Field visits to understand wear ability & practicalities
- Revision of UK regulations towards PPE

## Objective(s)

The project will be led by Manufacturing Technology Centre (MTC). They have been chosen for their expertise in material engineering and solid understanding of the gas industry.

The project will follow our standard change management approach through to research. This research will be shared with the current supplier of PPE to make informed improvements to our equipment.

Detailed deliverables:

Stage 1 – Engagement with Cadent to agree scope of project.

Stage 2 - Investigate current fire-retardant fabrics in the Market and from other sectors. Provide samples & produce matrix

Stage 3 – Field Visits – understand use of PPE & parameters of current fabric

Stage 4 – Workshop – End of project presentation & to understand next steps

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

n/a

## Success Criteria

The main success criteria for the project are:

- Suitable fabrics which will improve wear ability & a reduction in layers
- Greater understanding of wearer needs
- Cost vs quality matrix
- Report to be shared with supplier

## Project Partners and External Funding

The project will be wholly funded by the NIA

Cost for project inc Externals, Internals & Contingency = £25,670

## Potential for New Learning

Findings will be shared with Cadent's current supplier for PPE, PWS. The supplier will be engaged throughout via the Cadent buyer. The current contract includes the ability to trial new products therefore we would anticipate PWS using the outputs from the project to develop future PPE.

## Scale of Project

The scale of this project will be across all Cadent networks however learning will inform all Gas Distribution Networks which have similar PPE requirements for their networks. The scale of investment in this project is necessary as more cost effective and light weight fabrics are available.

## Technology Readiness at Start

TRL2 Invention and Research

## Technology Readiness at End

TRL3 Proof of Concept

## Geographical Area

This project will be delivered from MTC facilities and the Cadent network.

## Revenue Allowed for the RIIO Settlement

No revenue allowed for in the RIIO settlement.

## Indicative Total NIA Project Expenditure

£25,670

## 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)

A lighter weight PPE that can be worn in all temperatures that provides the same level of protection as the existing products. PPE is a requirement of the model and during hot weather there have been additional heat related illness identified to be related to the multi-layer PPE currently required. This would be good for the Operations teams who wear PPE on a daily basis.

There would be fewer items of PPE to purchase, replace and launder (wash) and to remember to wear. There would be fewer items to manufacture and less stock held by a manufacturer.

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

This project will not result in any direct benefits to the business as it is a research project, however, this project will contribute towards improvements in our PPE. Cadent's current supplier is contracted to make changes to fabrics throughout their contract period.

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

The proposed solutions for Personal protective equipment can be rolled out across all gas network licensees.

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

PPE is already on a replacement cycle that would mean this could be implemented with new items in line with the current PPE allocation. There is no reason to buy additional items outside of the current PPE replacement cycle.

### 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 proposed solutions can be adopted by other GDN's which face similar problems related to personal protective equipment in an operational environment.

### 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 project supports the strategy to continually improve safety & emergency. Ensuring the workforce has adequate PPE to complete their role safely.

- 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.

This project looks at new fabrics for use with PPE. This is not considered duplication as no other similar project has been identified on the ENA portal.

### 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 innovative as it looks at research into other sectors PPE use and the potential to reduce the need for multiple layers. This has not been considered or sourced.

### 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 Network Licensee will not fund this project as business as usual due to its innovative nature of work, and the high level of risk associated with the possibility that solutions will prove to be unsuitable for this type of user application.

**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 can only be undertaken with the support of the NIA as it looks to innovatively explore possible solutions that include previously unused materials for clothing.

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

Yes