

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

Mar 2018

### Project Reference Number

NIA\_SPEN\_030

## Project Registration

### Project Title

Zebedee Sectionaliser Device

### Project Reference Number

NIA\_SPEN\_030

### Project Licensee(s)

SP Energy Networks Distribution

### Project Start

March 2018

### Project Duration

2 years and 7 months

### Nominated Project Contact(s)

Andrew McDiarmid

### Project Budget

£60,000.00

## Summary

The outcome of this project will be a device to allow the online maintenance and replacement of smart links on the 11kV network.

### Nominated Contact Email Address(es)

innovate@spenergynetworks.co.uk

## Problem Being Solved

The maintenance of sectionaliser smart links is a small task which can have a major effect on customers, particularly in rural areas. In order to perform maintain or replace a smart link, the customer's supply must be interrupted. Given that smart links are maintained on a rolling basis across all areas, this can lead to interruptions for a significant number of customers every year.

## Method(s)

A device for temporarily bypassing a smart fuse will be developed. This device will be able to be placed on a sectionaliser to provide a temporary conductor, allowing the smart link to be removed for maintenance or repair without breaking the supply to the customer. This will be able to be applied with the same equipment as used to apply and remove the smart links.

This device will consist of a conductor surrounded by a spring, housed in a rigid, telescopic, insulated container. Each end will have connectors to allow it to be hooked onto a sectionaliser using standard short or long stick equipment.

## Scope

Twenty-four devices will be produced and tested in SPD and SPM districts within this project.

## Objective(s)

The outcome of this project will be a device to allow the online maintenance and replacement of smart links on the 11kV network.

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

n/a

## Success Criteria

The delivery of the above objectives, within budget and within agreed timelines, as is reasonable depending on the knowledge at this stage of the development phase.

The project will be managed within SPEN applying due diligence and best practices where appropriate.

## Project Partners and External Funding

Reece Innovation

## Potential for New Learning

This project will provide learning which will allow the results of device testing to be repeated, and to allow the device to be used on the 11kV network.

## Scale of Project

The device testing will be carried out across SPD and SPM districts. This will allow testing in a range of environments, and by a range of individuals, ensuring thorough testing.

## Technology Readiness at Start

TRL6 Large Scale

## Technology Readiness at End

TRL8 Active Commissioning

## Geographical Area

The primary monitoring will take place across the SPD and SPM networks.

## Revenue Allowed for the RIIO Settlement

None

## Indicative Total NIA Project Expenditure

£60,000

## 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)

Assuming a rollout across SPEN's network starting in 2019, this project will give a saving of £320,000 by the end of the ED1 Period.

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

If you no longer require an outage to change the smart link, you do not need to send notifications to customers. As such, the costs associated with this will no longer apply.

Reduction in customer carding - £100,000

Reduction in Postage costs - £19,000

Reduction in extra work cost - £97,000

Using these figures in a CBA, this results in benefits of £320,000 by the end of ED1.

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

This project is fully replicable across the UK network. All DNOs use sectionalisers and smart links on the network, and the product will be compatible with short- and long-stick equipment.

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

The estimated unit cost is £550 per unit. Assuming each distribution license area will require 12 of the units each, this will cost approximately £92,400.

### 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 DNOs have areas of their network which have sectionalisers, and therefore have a need to maintain and replace smart fuses. As such, the outputs and learnings from this project will be applicable to all DNOs.

#### 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

- 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.

To the best of our knowledge, there have not been any similar projects carried out by a UK DNO looking at a similar issue or product.

#### 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

n/a

#### 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**

n/a

**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**

n/a

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

Yes