

NIA Project Registration and PEA Document

Date of Submission

Apr 2013

Project Reference

Project Registration

Project Title

LV Voltage Regulator

Project Reference

Project Licensee(s)

Electricity North West

Project Start

January 001

Project Duration

0 years and 1 month

Nominated Project Contact(s)

Electricity North West Innovation Team

Project Budget

£96,000.00

Summary

The Low Voltage (LV) voltage regulator is a single-phase voltage regulator which has been adapted for mounting on a wood pole and connecting to the LV feeder to the property to provide fast response voltage compensation for both over and undervoltages. Two prototype units from US manufacturer MicroPlanet have been used in a limited trial.

This project aimed to develop an alternative method of providing a temporary solution to customer voltage issues.

Nominated Contact Email Address(es)

innovation@enwl.co.uk

Problem Being Solved

Method(s)

Scope

Objective(s)

This project aimed to undertake an extended field trial combined with detailed monitoring to ascertain both their short and medium term performance and the potential for full type approval. It is envisaged that this device will primarily be used as a means of rapidly

resolving voltage complaints in rural areas and it may be capable of both temporary and permanent solutions dependent on the type of complaint and the economics of the situation. Where there is a clear case for network reinforcement, which would require time to engineer, the voltage regulator could be used to resolve the complaint whilst a reinforcement scheme is designed, wayleaves negotiated and construction undertaken. Where the voltage complaint is due to disturbing loads or unidentified causes it could provide a permanent solution due to the fast response of the device to voltage dips and sags. Where voltage rise is caused by small scale embedded generators the regulator could be used to maintain the local network within statutory voltage limits. There may be an eventual case where LV voltage regulators are used to maintain statutory voltages, to compensate for a less static voltage on the 11kV networks due to an increased penetration of distributed generation.

The specific project objectives were to evaluate short term performance whilst ensuring devices give an appropriate output and improve network voltages to within statutory limits. Long term performance, ensuring the reliability, longevity and robustness of the devices. Various network uses, assessing the use of the units as temporary device for relieving voltage complaints vs more permanent measures.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

n/a

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

n/a

Geographical Area

Revenue Allowed for the RIIO Settlement

Indicative Total NIA Project Expenditure

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)

n/a

Please provide a calculation of the expected benefits the Solution

n/a

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

n/a

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

n/a

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

n/a

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

Please demonstrate how the learning from the project can be successfully disseminated to Network Licensees and other interested parties.

Please describe how many potential constraints or costs caused, or resulting from the imposed IPR arrangements.<

Please justify why the proposed IPR arrangements provide value for money for customers.

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.

n/a

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