

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 2013

### Project Reference Number

## Project Registration

### Project Title

Live Working in Substations (Feasibility Study)

### Project Reference Number

### Project Licensee(s)

National Grid Electricity Transmission

### Project Start

January 2012

### Project Duration

1 year and 3 months

### Nominated Project Contact(s)

National Grid TO Innovation Team

### Project Budget

£122,000.00

## Summary

Live Line working was initially introduced in the 1960s and actively utilised in the 1990s on the Overhead Lines (OHL). The project will enable National Grid use to use innovative techniques to deliver benefits to the system operator. These benefits are primarily around minimising system outages to carry out work and reducing system operator costs. The transmission system is likely to become increasingly constrained over the next 5-10 years, based on forecast constraint costs, new access arrangements, continued asset investment requirements and new generation connections. Live Working in substations offers significant opportunities in enabling certain maintenance and defect work to be carried out against this background, however to provide assurance that the long term investment and commitment is workable on the existing network, a more in depth assessment of the substations is required in order to establish the criteria for live working can be met. This assessment would be undertaken by the French Electricity Company RTE who are one of the worlds experts on live working at High Voltage (HV).

The re-establishment of Live Line Working on OHLs within National Grid has already been approved by governance groups within National Grid and discussions with Ofgem on this matter have already taken place. Substation live working is the next logical step to undertake.

Historically the HV equipment maintenance work in substations has been undertaken on circuits which have been de-energised, isolated and earthed. This requires longer return to service times of circuits and limited access availability. Because of the way the network is being developed and enhanced to facilitate the build of new generation and asset replacement etc it will become increasingly more constrained and hence even more difficult to get system access for essential maintenance and defect repairs.

To fully undertake live working in substations, further investment in staff training and specialist equipment is required and hence, to justify this investment, the existing substations will need to be assessed to see if the configurations used will be compatible with the established criteria for live working.

### Nominated Contact Email Address(es)

box.NG.ETInnovation@nationalgrid.com

**Problem Being Solved****Method(s)****Scope****Objective(s)**

The project will monitor the feasibility of live substation working in support of improved, more efficient system access in critical system areas.

**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