

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

Apr 2013

### Project Reference Number

## Project Registration

### Project Title

Woodhouse Steel Girder Mast Replacement Specification

### Project Reference Number

### Project Licensee(s)

Northern Powergrid

### Project Start

April 2005

### Project Duration

5 years and 0 months

### Nominated Project Contact(s)

Chris Goodhand, Innovation Manager (01977 605641)

### Project Budget

£340,000.00

## Summary

In the 1930s, YEDLs predecessor, the Yorkshire Electric Power Company, built a range of long-spanned 11, 33 & 66 kV steel girder mast lines, commonly known as the Woodhouse mast designs.

The Woodhouse steel mast supports were originally designed to accommodate 0.15" (7/.166") HDDB & 0.1" (7/.136") HDDB conductors using three basic design spans of 500 ft, 650 ft and 700 ft. A number of the circuits were later reconducted with 0.175" (37/.110") conductors designed on a 700 ft basic span. This was achieved without the need to carry out any alterations to the existing supports.

Over time the majority of 11 kV supports have been replaced with traditional wood pole alternatives, the majority of them resulting in interpolating as a means to reduce the long span lengths. A similar approach has been applied to the 33 and 66 kV circuits, but difficult wayleaves situations mean that around 300 km still remain.

The original specification cannot be re-used as it does not conform to current overhead line design requirements. Existing current designs such as AP1 or our proprietary OHL 9 and CE/C/37 specifications are limited to a span length of around 150m.

### Nominated Contact Email Address(es)

yourpowergrid@northernpowergrid.com

## Problem Being Solved

### Method(s)

### Scope

### Objective(s)

The challenge facing Northern Powergrid is that they have around 300 km of an asset that is critical to system security and, dependent on land use, a hazard to the public as it deteriorates. The absence of a like-for-like replacement renders it difficult to obtain wayleaves for routes using current designs. This has already led to our undergrounding one circuit in its entirety (Thurcroft-Mexborough-Edlington) and a high-risk section of another (the tee to Crowle). The high costs involved were justified by the pressing need to replace these lines before they posed an unacceptable risk to public safety.

### **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