

NIA Project Registration and PEA Document

Date of Submission

Apr 2013

Project Reference

Project Registration

Project Title

Improved Life Cycle Costing Methods

Project Reference

Project Licensee(s)

National Grid Electricity System Operator

Project Start

January 001

Project Duration

0 years and 1 month

Nominated Project Contact(s)

National Grid TO Innovation Team

Project Budget

£0.00

Summary

Traditionally, investment decisions have been made on the basis of capital costs of equipment only. This approach has been accepted since the capital costs for electricity transmission assets are large compared to annual operating costs and, being incurred up-front, are dominant in the discounted cash flow. However, it is becoming increasingly important that the whole life cycle be considered when evaluating options, including costs of obtaining raw materials, manufacturing, maintenance, losses and decommissioning/disposal of equipment.

The use of more holistic Life Cycle Costing (LCC) methods are an imperative for companies based on capital intensive assets having long asset lifetimes where the true current and future costs of ownership and operation are to be critically assessed with investment decision criteria that are searching and meaningful. Although the importance of this approach is recognised, its complexity and a lack of meaningful data and appropriate techniques have hindered its implementation.

While health and safety risk assessment is a well established discipline, very little has been done on life cycle assessment of human hazards and risks from plant manufacture, to scheme construction and commissioning, to operation and maintenance through to end of life management. There are significant potential benefits to being able to carry out such assessments in order to quantify the most effective ways to reduce hazards and risks and how to assess the effort and cost required to achieve safety by design for both new and current schemes.

Nominated Contact Email Address(es)

box.so.innovation@nationalgrid.com

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

To establish a methodology for evaluating the life cycle costs of transmission system assets and to account for the potential health and safety performance of such assets across their life cycle. The methodology will be used to support the development of asset investment and management policy and will allow optimum solutions to be identified taking into account economic, environmental and social costs. It will also inform health and safety policy and the cost benefit assessment of risk reduction and improved risk management strategies.

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