

NIA Project Registration and PEA Document

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.

Project Registration

Project Title

Future Network Modelling Functions

Project Reference

NIA_ENWL016

Project Licensee(s)

Electricity North West Limited

Project Start Date

Mar 2016

Project Duration

18 Months

Nominated Project Contact(s)

Dan Randles (dan.randles@enwl.co.uk)

Project Budget

£125,000

Problem(s)

Low carbon technologies and smart grids are asking new, more complex questions of network design and planning. Worst case static load analysis is no longer sufficient with embedded generation, reverse power-flow, time series data, and network solution optimisation now all becoming increasingly relevant.

Electricity North West uses models of varying complexity, such as IPSa, DINIS and LV AFFIRM, for planning on our network. These static models operate independently focusing on one voltage level only and individually provide only a limited range of functionality. Learning obtained from innovation projects both in ENW and elsewhere has shown the benefits of modelling across the whole network and has also demonstrated requirements for more advanced techniques, particularly on the LV network, such as 4 wire assessments or harmonic analysis.

This project is a research piece to better understand the forward requirements for system modeling, the expected functionality of tools, and the associated data and system architectures.

Method(s)

Phase 1 of the project will document the existing challenges/issues/uses around network modelling and identify the new requirements driven by the challenges caused by the introduction of low carbon technologies and the prospect of the role as a distribution system operator. These existing challenges/issues/uses and new requirements will be drawn from the different stakeholders within ENW and will include engineering, IT and business requirements. High level Use Cases will be identified and used to inform the requirements. The output of this phase will be an agreed documented set of as-is and to-be requirements.

Phase 2 will continue the development with a strategic assessment based on the findings from Phase 1 whilst recognising the capabilities of recent investments e.g. the new NMS and the general direction of other technologies in the market.

Scope

This is a research piece to inform the understanding of the future requirements for system modelling and devise a strategic approach to meet the requirements using both existing and new technologies.

Objective(s)

To produce a report based on

- Identified requirements
- Strategic assumptions
- Scenario modelling
- Summary Analysis
- Key risks and dependencies

Success Criteria

This project will be considered a success upon production and publication of a report on the future requirements for system modelling , including a strategy to meet the requirements using both existing and possibly new technologies

Technology Readiness Level at Start

2

Technology Readiness Level at Completion

4

Project Partners and External Funding

CGI will be used to support this project.

Potential for New Learning

The project will produce a robust assessment on the expected future requirements for system modelling within a UK DNO which can be used to inform strategic decision making in this important area.

Scale of Project

The project will cover all the system modelling requirements for Electricity North West.

Geographical Area

North West of England

Revenue Allowed for in the RIIO Settlement

None

Indicative Total NIA Project Expenditure

£125,000

Project Eligibility Assessment

Specific Requirements 1

1a. A 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 systems and 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

Specific Requirements 2

2a. Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

Please answer one of the following:

i) Please explain how the learning that will be generated could be used by relevant Network Licenses.

The report will be made available to all Network Operators for inclusion in their strategy on system modelling

ii) Please describe what specific challenge identified in the Network Licensee's innovation strategy that is being addressed by the Project.

By using system wide modelling we will be able to provide better choice to customers through better understanding of how their connection affects the system. We will also be able to maximise the use of our existing assets through increased understanding of our network.

2b. Is the default IPR position being applied?

Yes

No

If no, please answer i, ii, iii before continuing:

i) Demonstrate how the learning from the Project can be successfully disseminated to Network Licensees and other interested parties

ii) Describe any potential constraints or costs caused or resulting from, the imposed IPR arrangements

iii) Justify why the proposed IPR arrangements provide value for money for customers

2c. Has the Potential to Deliver Net Financial Benefits to Customers

i) Please provide an estimate of the saving if the Problem is solved.

As this is a research project it is not possible to estimate savings at this point.

ii) Please provide a calculation of the expected financial benefits of a Development or Demonstration Project (not required for Research Projects). (Base Cost – Method Cost, Against Agreed Baseline).

Not required as this is a research project

iii) Please provide an estimate of how replicable the Method is across GB in terms of the number of sites, the sort of site the Method could be applied to, or the percentage of the Network Licensees system where it could be rolled-out.

The recommendations from the report can be used by any DNO to inform their modelling strategy.

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

There is no rollout cost. The report will be made available to all DNOs.

2d. Does Not Lead to Unnecessary Duplication



i) Please demonstrate below that no unnecessary duplication will occur as a result of the Project.

A review of the smarter networks portal has not revealed any projects in this area.

ii) If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.