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

Jun 2015

Project Reference Number

NIA_ENWL003

Project Registration

Project Title

Review of Engineering Recommendation P2/6

Project Reference Number

NIA_ENWL003

Project Licensee(s)

Electricity North West

Project Start

January 2015

Project Duration

1 year and 9 months

Nominated Project Contact(s)

Electricity North West Innovation Team

Project Budget

£650,000.00

Summary

Scope of services:

- Work Stream 1 - Project Initiation

- Work Stream 2 - Assessment of P2/6 and Identifying Options for Reform

    - WS2.1 Scope and framework for assessing security performance and measures of characteristic network designs
    - WS2.2 Service quality and cost effectiveness of the present network design practises
    - WS2.3 Risk associated with asset replacement, common mode failures and high impact events
    - WS2.4 Impact of Smart Grid technologies on service quality risk profile
    - WS2.5 Assessment of impacts of alternative control and operation strategies on security of supply
    - WS2.6 Loss inclusive design of distribution networks and impact on security of supply
    - WS2.7 Alignment of security of supply standard in distribution networks with other codes and schemes
    - WS2.8 Options for future development of distribution network standard

- Work Stream 3 - P2/6 Options Report

- Work Stream 4 - Stakeholder Engagement Workshops

- Work Stream 5 - Formal Strategy Consultation for P2

- Work Stream 6 - Detailed review and analysis

- Work Stream 7 - Final Recommendation

- Work Stream 8 - Programme work for Phase 2

Third Party Collaborators

DNV

NERA Economic Consulting

Imperial College London

Nominated Contact Email Address(es)

innovation@enwl.co.uk

Problem Being Solved

Engineering Recommendation P2 has been in place since 1978 and has played a major role in the development of secure, reliable distribution networks. Whilst a number of changes have been made over the years, the document has served the industry well for over 30 years.

P2 is a ‘deterministic’ standard and is largely focused around ensuring sufficient capacity is available to meet the ‘peak demand’ within a manner and timeframe consistent with the ‘group demand’ (or put simply, the size of network) in question. P2 is also ‘risk based’ to such an extent that larger ‘load groups’ are in general deserving of a higher level of security.

The most fundamental issue regarding the future evolution of the P2 standard is whether it prescribes economically efficient investments, given many changes affecting the energy market at present, including the (anticipated) prolific deployment of non-network technologies and the changing role of the customer. This gives rise to the need for a fundamental review of the baseline philosophy of distribution network operation and design to ensure that the UK Government’s energy policy objectives can continue to be met in a cost effective and pragmatic way.

The requirement for a fundamental review of Engineering Recommendation P2 has been recognised by Network Licensees (i.e. the electricity Distribution Network Operators (DNO) companies and National Grid) for some time. The Licensees therefore believe that it is timely to undertake a comprehensive review of Engineering Recommendation P2 in relation to customer and system requirements and an understanding of what is required for the long term development of networks.

Method(s)

The review is formed of two distinct phases:

Phase 1

Phase 1 is a research and exploration phase by the R&D Provider. DNOs and National Grid have no preconceived approach to future security standards. The spectrum of possibilities ranges from a modification and update of the current arrangements, development of a completely new approach starting from first principles, through to recommending scrapping such standards completely. The essential task of Phase 1 is to research a range of options for the overall approach to propose how such options can be evaluated, to undertake that evaluation, and to recommend the most appropriate fundamental approach that should be taken forwards into Phase 2.

This phase will be posing some fundamental questions about the means of providing the appropriate level for the security of supplies to customers, via a combination of network assets, customer owned assets, and both technical and commercial operational management techniques, and as such will be of great interest to many stakeholders. Hence as part of this phase it will be important for licensees to consult widely with such stakeholders. The Consultant will be an integral part of the consultation process, although licensees and the DCRP will need to preside over the formalities. However the Consultant will be expected to contribute fully to the development of materials, papers and public meetings. Consultants should include proposals for public engagement.

The key deliverable of Phase 1 is a final report addressing all the relevant issues. The report will lay out the options, the relevant analysis including feedback from consultations, and make recommendations for a future revision to Engineering Recommendation P2/6. The report will clearly point the way for how any necessary development can be done in Phase 2 including a draft programme, key milestones and an indicative timeline.

Phase 2

Phase 2 will be further defined following the output of Phase 1. There is expected to be a need to codify and implement the revised arrangements. Phase 2 could include further research and development to create the ultimate revised arrangements. Phase 2 will undertake whatever work is required to codify the proposed arrangements, to consult widely and appropriately with stakeholders, support the statutory consultations, make the formal documentary changes and assist with implementation.

Scope

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· Work Stream 8 - Programme work for Phase 2

Objective(s)

The objective is to review the requirements for and function of a planning standard and if appropriate produce an updated version of Engineering Recommendation P2 so the security provided by Network assets together with systems and infrastructure provided by others (as appropriate) can be assessed against agreed standards.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

In order to be sufficiently future proof the revised document will focus on developing a framework against which means of providing security of supply can be evaluated. It is envisaged that a revised standard would not require a further review before, ideally, 2030. DNOs and National Grid will ensure that the means of provision of the appropriate supply security will be executed in an overall economic, efficient and co-ordinated manner.

Project Partners and External Funding

n/a

Potential for New Learning

n/a

Scale of Project

This project once complete is applicable to the whole of the GB.

Technology Readiness at Start

TRL3 Proof of Concept

Technology Readiness at End

TRL7 Inactive Commissioning

Geographical Area

United Kingdom of Great Britain

Revenue Allowed for the RIIO Settlement

N/A

Indicative Total NIA Project Expenditure

£604,000

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

Low TRL, not required

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

The learning from phase 1 of this project will feed in to phase 2, which will be a re-write of the existing P2-6 document.

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

The roll out of the project will be the cost to deliver stage 2, if required.

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

The learning will be used to meet network obligations stipulated by the UK government in their most cost effective manner.

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

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