NOMs Methodology Issue 18

Report demonstrating compliance with Direction (and further Instruction)

Summary

1. Manner of modification

The TOs have worked collaboratively to make modifications to the existing Methodology in line with the Direction and further Instruction. Ofgem have been regularly updated through weekly teleconferences, regular face to face meetings and 'working (draft) versions' of the Methodology and supporting documents for comment.

This productive way of working has resulted in the modifications to the Methodology as summarised in this report. Where further development is required, or development in line with the Direction or further Instruction has been conducted on a reasonable endeavours basis, this has been detailed in the Methodology.

The TOs consulted stakeholders on the proposed modifications (21st May to 18th June 2018). To satisfy Special Licence Condition 2L.12, representations from our stakeholders have been addressed in the Methodology where applicable. Stakeholder representations can be found in appendix 1 of this report.

2. Extent of modification

The Common Methodology outlines the fundamental approach to the calculation of Asset Risk. There are two accompanying Network Asset Risk Appendices (NARAs) that outline the NGET implementation and SPT/SHE-T implementation respectively. In addition to these documents there are three individual Licensee Specific Appendices (LSAs), which provide further detailed information on the individual TO implementation and TO specific data elements. The LSAs contain sensitive data that is only relevant to each TO and will not be made available in the public domain. These LSAs will be updated following the successful completion of the Calibration, Testing and Validation process.

The combination of the Common Methodology and a TO specific NARA is designed to enable a competent reader to arrive at a theoretical value for Asset Risk. It is not possible to determine the actual value of Asset Risk without consideration of the Licensee Specific Appendix.

Following the Calibration, Testing and Validation process, two competent independent assessors will be able to arrive at the same view of a licensee's performance if consideration is given to the Methodology, NARAs and LSAs.

A. Common Methodology

1.1. General extent of modification

There are two separate Network Asset Risk Appendices (NARAs) that detail the TO specific approach to implementing the Common Methodology for NGET and SPT/SHE-T respectively. (Note that these are in addition to the LSAs)

The modifications focus on the evaluation of the network asset condition, network risk and network replacement outputs measures. The evaluation of network performance and network capability are included in the Common Methodology (Implementation for RIIO-T1) for completeness. There are no proposed modifications to the evaluation of the network performance and network capability measures.

A monetisation approach has been developed for all lead assets which calculates the monetised risk associated with an asset by multiplying the probability of failure by the monetised consequence of failure.

The justification elements of the methodology have been removed from the main methodology document as this has been developed through a separate cross –sector working group led by Ofgem. The required associated reporting will be developed once a position has been reached on the implementation of the incentive mechanism.

1.2. Common and Licensee specific parameters

The Common Methodology contains the high-level approach to evaluating the Probability of Failure and the Consequence of Failure. Relevant parameters and formulae are explained in the NARA and LSA documents. Gaps in data will be ascertained and collected during the Calibration, Testing and Validation stage. Assumptions are included in the NARAS and LSAs where appropriate.

1.3. Treatment of uncertainty

The principles for uncertainty are given in Common Methodology. Further development is required in this area in conjunction with the Risk Trading Model. Uncertainty will be evaluated in line with Common Methodology, detailed in the NARA and evident through the Risk Trading Model.

1.4. Asset Health

The TOs have a common high-level approach, supplemented with more detailed TO-specific implementation measures, to the determination of the probability of failure. Both approaches give a continuous output which replaces the requirement for the discrete five asset health indices.

The same factors used to evaluate the health indices (e.g. information collected related to the condition, operating environment) are among those considered as part of this approach in determining the probability of failure. The probability of failure assumes that routine maintenance will be carried out.

1.5. Assets requiring separate treatment

In the TO-specific NARAs, it is proposed to treat HILP assets the same as all other assets for the calculation of asset risk.
Each TO will then individually justify any intervention taken on a HILP asset over assets with similar or higher risk scores.

1.6. Implementation plan

There is a high-level implementation plan included in each TO specific NARA. As further development work is required to ensure that Calibration, Testing and Validation is appropriately carried out, it is not possible at this stage to provide a detailed plan for implementation. TOs will need to update their existing internal documentation to align with a new approach.

1.7. Risk Trading Model

The Common Methodology includes the structure of the Risk Trading Model, with the latest development works summarised in each NARA. The development of the Risk Trading Model continues with regular discussion & feedback from OFGEM. A full model will be developed that delivers consistent outputs between all TOs following the Calibration, Testing and Validation stage.

Compliance Report

Direction Ref	Evidence
3	Ofgem have been provided updates on a weekly teleconference, monthly face to face meetings and provided with regular draft sections of the methodology for comment.
5a	Not fully compliant. Independent assessor with appropriate experience would be able to determine the theoretical asset risk. To formulate a generic assessment of performance additional data would be required. This is to be supplied as part of the implementation plan.
5b	The proposed methodology allows an independent assessor to arrive at a value for network risk. However, under and over delivery cannot be addressed until the principles of implementation of the incentive mechanism can be agreed with the Cross Sector Working Group.
7	All 5 NOMs are covered in the common methodology. The approach for all TOs is common. Process appendices detail the specific application of the methodology by each TO.
8	The common methodology only references Network Condition, Network Risk and Network Replacement Outputs. Appendix 1 to the common methodology details the common approach to Network Performance and Network Capability, there are no proposed modifications to these two measures.
9a	Clarification: Condition risk is referred to as Asset Risk. From a theoretical perspective Asset risk can be derived from the Risk trading model and combined with consequence will allow comparison as directed.
9b	Compliance cannot be demonstrated until calibration, testing and validation is complete.
9c	Compliance cannot be demonstrated until calibration, testing and validation is complete.
9d	The Risk Trading Model will facilitate scenario based investment planning. The methodology will contribute Asset Risk data on driver impact.
10	This is down to specific TO implementation.
11	The methodology meets the requirement for Network Performance and Network Capability. However, the RIGs will require modification to reflect the methodology following the output of the Cross Sector Working Group.
12	The NARAs reflect all parameters required to undertake evaluation including interim steps and formulae.
12a	All parameters are defined, however, at this stage are not evaluated.
12b	Formulae cover Network condition, Network Risk and Network Replacement Outputs.
12c	All modifiers are explained in the NARAs
12d	Data required is identified, where gaps in NGET data is known a high level plan to collect is included in the NARA.
13	Assumption logs are provided. All material assumptions are detailed with materiality assessed by the TOs.
14	NGET assumptions and biases are included in the assumptions log.
16a	A theoretical approach to accounting for uncertainty is included in the common methodology. NARAs detail variation in implementation for each TO.
16b	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach allows for this.

16c	Compliance cannot be demonstrated until calibration, testing and validation is complete.
17a	All existing parameters are included in the evaluation of probability of failure with some additions.
17b	All existing parameters are included in the evaluation of probability of failure with some additions.
18a	End of life modifiers for each asset have been evaluated as part of the methodology and included in the NARAs.
18b	Modifiers and differentiators have been included to account for environment and loading and are included in the NARAs.
19	The methodology adopts an alternative to the five discrete health indices. Methodology utilises continuous distribution functions.
20	Theoretically the Risk Trading Model will facilitate this assessment through a scenario based implementation detailed in the process appendices.
21	Condition is a contributor to probability of failure. Consequence is mapped to criticality in the NARAs.
22a	The System Consequence section details design and operation parameters including redundancy. Variables accurately reflect actual network topology and redundancy.
22b	Probability of Consequence is broken down into realistic event chains as determined by the TOs.
22c	Equations take account of prevailing system conditions such as demand, generations and planned outages.
22d	Probability is assessed independently.
22e	Compliance cannot be assessed without clarification from Ofgem.
22f	This is included with System Consequences with materiality deemed by the TOs.
22g	The duration of consequence is defined as the minimum functional restoration time including system operator actions.
22h	All monetised failure consequences are weighted averages of the full range of expected outcomes.
22i	System Consequence defines a single monetised consequence which is a combination of possible types and magnitudes of outcomes.
23	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach allows for this.
24	This is covered as part of the TO implementation.
25	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach allows for this.
26	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach allows for this.
27	The translation is explained in appendix 1.
28a	This is stated in appendix 1.
28b	This is stated in appendix 1.
29	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach has not been constrained.
30a	The Risk Trading Model will facilitate scenario based investment planning.
30b	The Risk Trading Model will facilitate scenario based investment planning.
31	Removed at Ofgem's request for December 2016 Submission.
32	Removed at Ofgem's request for December 2016 Submission.
33	Removed at Ofgem's request for December 2016 Submission.
34	Removed at Ofgem's request for December 2016 Submission.
35a	Currently non-compliant, activities have been identified but are not time bound.

35b	Currently no need for a phased requirement.
35c	Works have been identified and included in the common methodology.
35d	No measures are necessary.
36	All sensitive information is included in the licensee specific appendices.
37	Development work is ongoing and described in each TO specific NARA.
37a	The Risk Trading Model will facilitate scenario based investment planning.
37b	Risk Trading Model can facilitate this.
37c	The model matches detail process.
37d	Risk scores are calculated by the Risk Trading Model.
38	Risk Model contains sensitive data.
39	Approach is defined in the common methodology.
40a	The approach is detailed in the common methodology.
40b	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach has not been constrained.
40c	Compliance cannot be assessed at this time as all input data has not been evaluated. However, the theoretical approach has not been constrained.
40d	Timeframes have not been included as plans have not been fully developed by the TOs.
41	Methodology defines these as outputs.
42	Parameters are unique and identifiable.
43	Plan is public available in the common methodology.
44	Models have not yet been developed.
46	Non sensitive information is included in the common methodology and NARAs.
47	All documentation is to be updated in line with the implementation plan.
48	TOs have collaborated on a single common methodology. Each TO has submitted a specific appendix.
49	Content is referenced in the common methodology and NARAs.

Appendix I – Stakeholder Consultation

1   Background

The three Electricity TOs ran a consultation on the new Electricity Transmission Network Output Measures (NOMs) Methodology Issue 18 and associated NARAs, from the 21st May to 18th June 2018. The consultation was published on each of the three TOs websites and an e-mail communication was sent to over 1000 stakeholder contacts (all of whom were invited to respond in the previous consultation events, associated with this methodology).

The short consultation consisted of four questions;

1. Since the previous consultation, the proposed NOMs Methodology has been developed into a shorter high level Common Methodology document, supplemented with 2 separate Network Asset Risk Annex (NARA) documents (one for SPT/SHE-T and one for NGET) and Assumptions Logs associated with each submission. The NARAs explain the different approaches used within each organisation to deliver the overall NOMs methodology. Does this change of document structure provide the reader with a simpler overall explanation of the high level Common NOMs methodology as well as the detail needed to assess each organisation's specific methodology?

2. It is proposed that High Impact Low Probability (HILP) Asset Risk scores are calculated using the same methodology as all other assets. The asset owner may then choose to intervene on a HILP asset in preference to an asset with an equal or higher Asset Risk score and will justify each decision made during the performance assessment process.
   Do you agree that the proposed methodology for dealing with High Impact Low Probability (HILP) assets is appropriate?

3. The Safety & Environmental Consequence sections (contained in each NARA) have been developed significantly, following the previous consultation event. Is the proposed approach to calculation of the Safety & Environmental consequence values appropriate?

4. We would be grateful for any other comments you have on the Network Output Measures methodology.

3   High level feedback

Response to the consultations was limited with a total of 6 responses being received across the three TOs, although this did include three identical responses from EATL to each TO. The list of responders was as follows:

- Northern Powergrid
- EnergyLine
- EATL (x3) – treated as a single response
- Aberdeenshire council

All stakeholder feedback has been shared with OFGEM and individual responses will be provided to each respective Stakeholder.

General Feedback

The majority of the responses received were supportive of the changes made to create a shorter higher level common methodology, although one respondent suggested that the document was still extremely technical and a higher-level summary would be appropriate.

The TOs reflected that:
- The Common Methodology did provide a high-level summary of the overall approach, but still required some knowledge of the subject to fully understand
- a reasonable level of competency would be needed to fully understand the detail of each NARA

No material changes were made as a result of the feedback received.

HILP

As a result of the feedback received on HILP assets, some additional explanations were included as very minor changes to the TO NARAs.

Northern Powergrid

A significant part of the feedback from Northern Powergrid questioned the direction taken to have separate TO NARAs to document how the common methodology is implemented in NGET & SHE-T/SPT respectively.

It is felt that this feedback does not reflect OFGEM's aims, as defined in the Direction and Further Instructions and has therefore had no impact on the Common Methodology and associated NARAs.