Electricity Transmission Licensees
and other interested parties

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Decision to not reject the modified Electricity Transmission Network Output Measures (NOMs) Methodology Issue 18

Introduction

The electricity transmission licence requires onshore electricity transmission licensees[1] (National Grid Electricity Transmission plc (NGET), Scottish Hydro Electric Transmission plc (SHE-T), and SP Transmission plc (SPT)) to have in place a NOMs methodology. The current version of the methodology came into effect on 27 May 2017 following a modification process by the Licensees.

On 08 June 2017, we issued instructions[2] ("the Instructions") to the licensees to further modify their NOMs methodology. The Instructions required the Licensees to undertake further work to comply with our direction[3] ("the Direction") issued on 29 April 2016.

The Instructions required Licensees to submit the following NOMs methodology documents for approval:

    a. Common Network Output Measures Methodology (a joint submission from all three Licensees)
    b. Network Asset Risk Annex ("NARA"), (a submission for NGET, and a joint submission for SPT and SHE-T)
    c. Licensee Specific Appendices – separate submissions for each Licensee
    d. Assumptions Logs (a joint submission and Licensee specific submissions)
    e. Uncertainty Methodology (a joint submission and Licensee specific submissions)

The Licensees conducted a 28-day public consultation from 21 May 2018 to 18 June 2018 on their proposed modifications, in accordance with the licence. Following this they jointly submitted on 10 July 2018 a common NOMs methodology document and NARA, (a submission for NGET, and a joint submission for SPT and SHE-T) for the Authority's approval.

The Licensees also submitted working draft versions of their Licensee specific appendices and assumptions logs, which we reviewed as part of our assessment. A full list of the documents considered for this decision is provided in Appendix 1 to this letter.

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[1] Collectively referred to as Licensees

[2] https://www.ofgem.gov.uk/publications-and-updates/further-instructions-electricity-transmission-licensees-modifications-their-network-output-measures-methodology

[3] https://www.ofgem.gov.uk/publications-and-updates/decision-direct-modifications-electricity-transmission-network-output-measures-methodology

<u>Our decision</u>
In our view, the proposed modifications represent an incremental improvement in both the transparency and objectivity of the NOMs methodology and will better facilitate the achievement of the NOMs methodology objectives as set out in Part B of Special Condition 2L of the Licensees' respective licences. We have therefore decided that the Licensees should implement these proposed modifications. Consequently, the modified NOMs Methodology comes into effect from 08 August 2018 and Licensees are required to implement it from this date. We have provided a summary of our assessment in Appendix 2.

We also recognise the ongoing development of the deliverables associated with these modifications to the NOMs Methodology. Appendix 3 summarises our views on the direction of this development in the immediate short term.

Finally, we expect the Licensees to continue to improve the methodology as part of their respective licence requirement to review it at least once a year. These reviews should incorporate improved asset management practices, data, and understanding of asset failures.

If you have any questions on this matter, please contact Peter Tuhumwire at Peter.Tuhumwire@ofgem.gov.uk or by telephone on 020 3263 9660 in the first instance.

Yours sincerely,

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Min Zhu,
Deputy Director, Electricity Transmission

APPENDIX 1: SUBMITTED DOCUMENTS CONSIDERED BY AUTHORITY FOR DECISION TO NOT REJECT MODIFIED METHODOLOGY

Deliverable	Item submitted	Format	Publicly Available*
Report	Compliance Report	PDF	Yes
Common Methodology	NOMs Common Methodology Issue 18	PDF	Yes
Network Asset Risk Annex	NGET Network Asset Risk Annex	PDF	Yes
	SPT and SHE-T Network Asset Risk Annex	PDF	Yes
Assumptions Logs	NGET Assumptions Log	PDF	Yes
	SPT and SHE-T Assumptions Log	PDF	Yes
Licensee Specific Appendices (LSAs)	Draft NGET LSAs	MS Word	No
	Draft SPT LSA	MS Word	No
	Draft SHE-T LSA	MS Word	No

* The items listed above as being publicly available have been published on Ofgem's website alongside this letter. The items listed as not publicly available contain commercially sensitive information and have therefore not been published.

APPENDIX 2: SUMMARY OF THE AUTHORITY'S VIEWS FOLLOWING REVIEW OF THE SUBMITTED DOCUMENTS

Overall, the proposed modifications represent an incremental improvement to the methodology and will better facilitate the achievement of the NOMs objectives as set out in in Part B of Special Condition 2L of the Licensees' respective licences. The overall structure of the methodology has been modified into a suite of documents that complement each other to form a comprehensive methodology as illustrated in Figure 1 below.
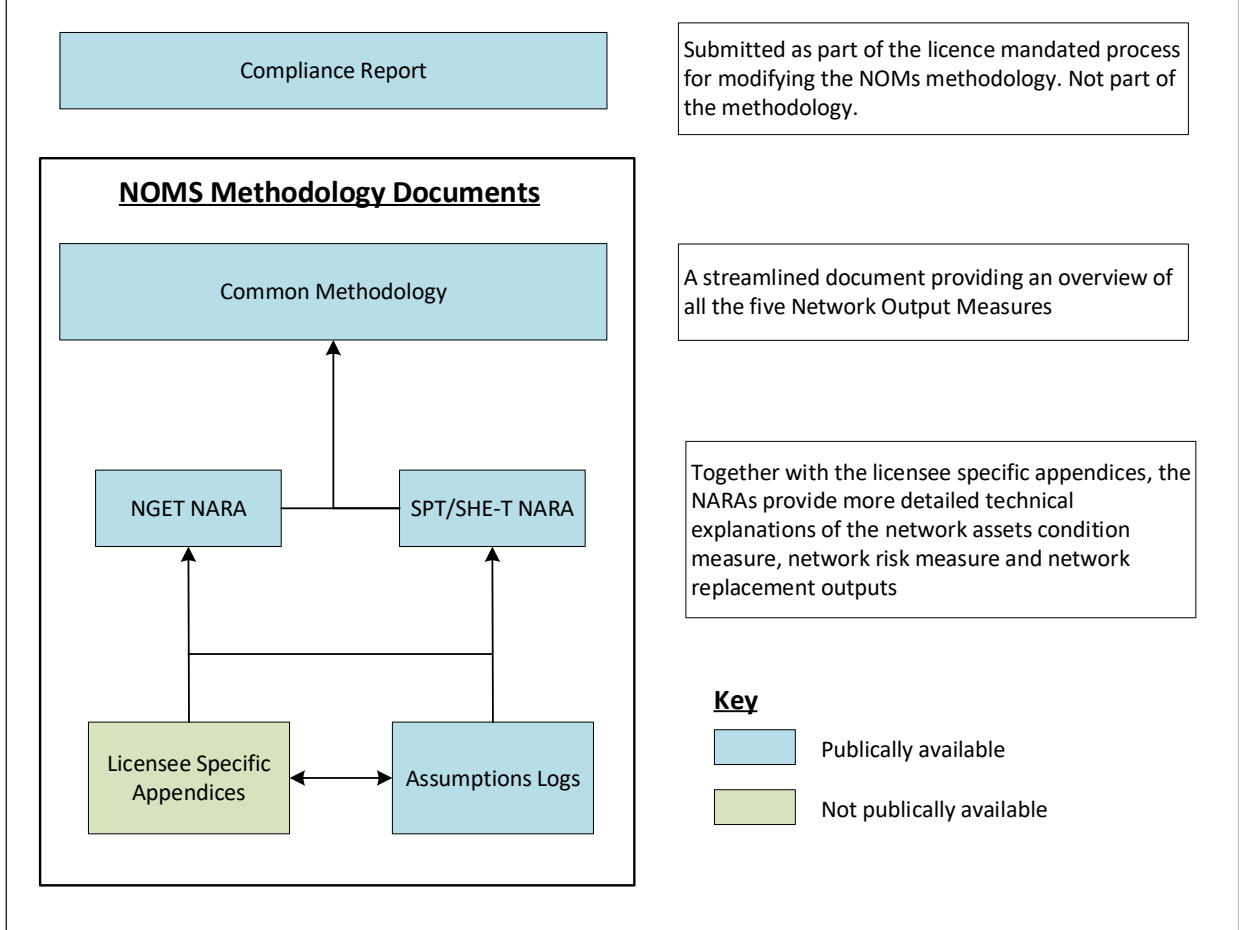
Figure 1: The relationship between the different NOMs methodology documents

Below is a summary of our assessment of the documents in figure one above that were considered for our decision on the Licensee's proposed modifications.

a. Compliance Report
   The licence requires that the Licensees submit a report as part of the NOMs methodology modification process. The Licensees elected for this report to take the form of a compliance report based on the structure of our 2016 Direction. It is based on the compliance report the Licensees submitted last year with amendments and additions to reflect the changes to the methodology. It also specifies areas of the methodology that require further development in order to fully align with our Instructions and ultimately better meet the NOMs objectives.

b. Common Network Output Measures (NOMs) Methodology
   The common NOMs Methodology document provides a high-level explanation of all five Network Output Measures, namely:
   1. network assets condition measure
   2. network risk measure
   3. network performance measure
   4. network capability measure
   5. Network Replacement Outputs

It provides a high-level explanation of the NOMs, including their definitions, importance and application. It has been designed to improve its accessibility to a wide range of stakeholders, including those with limited technical understanding of electricity transmission networks. The document provides references to the Network Asset Risk Annex (NARA) and Licensee Specific Appendix (LSA) documents for more details on three of the NOMs, that is, network assets condition measure, network risk measure and Network Replacement Outputs measure. These three have specific allowances and expenditure associated with them.

c. Network Asset Risk Annexes (NARAs) and Licensee Specific Appendices (LSAs)
The two NARA documents and various LSAs build on the high-level explanation provided in the common NOMs methodology document with additional technical details specifically on the network assets condition measure, network risk measure and Network Replacement Outputs measure. They include specific details including equations on the quantification of network risk. They provide further clarification, improve both the transparency and objectivity of the methodology and provide a good basis from which the associated deliverables such as rebased monetised risk targets will be set and Licensee performance assessed.

The proposed modifications furthermore build on existing principles of the methodology to provide an important input into the setting of appropriate outputs for RIIO-T2 and beyond as well as the assessment of Licensee performance against output delivery.

Assets requiring separate treatment
There are assets on the electricity transmission network that are associated with high impact low probability (HILP) events. These are events whose likelihood of occurrence is very small but with extreme and severe consequences if they were to occur. In response to Licensees' proposals that these assets require separate treatment compared to similar assets on their networks, we set out a minimum level of requirements for separate treatment in our 2016 Direction and clarified it further in our Instructions[4].

The Licensees have proposed that in the management of their assets associated with HILP events, a Licensee may decide to treat them differently from similar assets on their network. In such cases, Licensees will provide justification for their decisions to the Authority. This approach is similar to the general requirement for justification for any assets that Licensees may choose to intervene on against the prioritisation of the NOMs methodology.

We acknowledge this modification as an improvement to the methodology as it recognises an important aspect managing these assets. However, in order for the treatment of these assets to fully meet the objectives of the NOMs methodology, further development is required and has been highlighted in Appendix 3.

d. Assumptions Logs and Uncertainty Methodology
The assumptions logs and uncertainty highlight the areas for potential further improvement in the NOMs methodology. The Licensees have combined the uncertainty methodology development into the calibration, testing and validation (CTV) workstream due to the interdependence of the two workstreams. As a result, we expect that uncertainty in the methodology will be estimated during the CTV process and appropriately reflected in the assumptions.

We have published a copy of the current version of assumptions log and expect it to be updated based on the results CTV results as well as over time to account for new

information such as additional asset data. We expect a gradual reduction in both the level of uncertainty in the methodology and a reduction in the overall number of assumptions in the methodology over time as the Licensees improve their asset management practices, data and understanding of asset failures.

APPENDIX 3: ONGOING DEVELOPMENT AND IMPLEMENTATION WORK

The NOMs methodology has evolved significantly since the beginning of the RIIO-T1 price control from a volumes outputs basis to its current version that quantifies network risk in monetised terms. As part of the current development cycle, this evolution is being accompanied by various activities as the Licensees implement and fully embed the proposed modification to the methodology into the Licensees' businesses.

We expect the Licensees to carry on with these activities in order to fully meet the requirements of our Direction and Instructions and complete the deliverables associated with modifying the NOMs methodology as follows:

1. Assets requiring separate treatment
   The Licensees have proposed that in the management of their assets associated with HILP events, a Licensee may decide to treat them differently from similar assets on their network. In such cases, Licensees will provide justification for their decisions to the Authority.

   We expect the Licensees to build on this proposal and set out more explicitly the decision-making process for these types of assets. This should include a methodology for identifying/classifying these assets and a logical explanation on how intervention decisions for them are logically and objectively reached. Any differences to the decision process for similar assets not associated with HILP events should be highlighted. The output of this development should enable an independent party to arrive at a broadly similar intervention outcomes if presented with the same relevant information.

   Our view is that without this additional development, the treatment of these assets does not fully meet the objectives of the NOMs methodology.

2. Calibration, Testing and Validation (CTV) outputs
   CTV is the process by which the application of the NOMs methodology is being checked and verified as far as possible against real business scenarios and asset failures. This process will enable the Licensees and Ofgem to confirm the extent to which the methodology's outputs can be relied upon as an input when making investment decisions.

   We are satisfied at this stage that the NOMs methodology is robust from an engineering perspective and better facilitates the achievements of the NOMs objectives. CTV is critical to ensuring it is implemented correctly; for example, by ensuring similar outcome for differing approaches to deriving probability of failure. We are continuing to work with the Licensees to ensure that the CTV process delivers robust outputs in line with our Instructions.

   There is potential for the CTV process to result in further modifications to NOMs methodology. We do not expect these modifications to be significant due to the level of scrutiny that has gone into the CTV plans and methodology as a whole to date. For example, modifications may be required in the form of recalibration of parameter variables, correction of errors and updating assumptions rather than fundamentally changing the approach to risk scoring with fresh equations and new parameters. In the event that CTV work results in the need to modify the NOMs methodology, Licensees must follow the change processes as specified by the licence.

3. Rebasing of targets
   The Licensees' NOMs targets (Network Replacement Outputs) are set out in Table 1 of Special Condition 2M of the electricity transmission licence. These targets were set in accordance with the NOMs methodology that was in place at the start of RIIO-T1 and are defined as required volume of assets in four replacement priority (RP) categories ranging from RP1 (asset is new or as good as new) to RP4 (asset is in need of replacement) at the end of the RIIO-T1 price control.

The licence requires that the targets should reflect any changes as a result of modifications to the NOMs methodology. As part of this process, the Licensees need to convert these targets into equivalent monetised targets. The rebased targets shall be the basis against which Licensee performance shall be measured and shall also allow for the implementation of the RIIO-T1 incentive mechanism.

We expect Licensees to proceed with the rebasing of their targets using their validated NOMs methodology. We have provided guidance for the Licensees to follow during the rebasing process, consistent with other sectors, and have stated:
- Rebased targets shall be as equally challenging as the original ones for each licensee to meet and outperform,
- The same principles shall be applied as those used in each respective licensee's RIIO-T1 Business Plan, and
- Direct translation of the original investment plan shall be made wherever appropriate

The Licensees shall propose and agree a rebasing methodology with the Authority ahead of submission of the draft rebased targets by 31 October 2018. We aim to consult on our decision regarding the rebased targets in early 2019.

4. Risk Trading Model (RTM)
The RTM should be designed to apply the processes explained in the NOMs methodology, allow the Authority to implement the NOMs Incentive Mechanism, and to demonstrate how they make investment decisions. During the previous development phase of the methodology, the Licensees proposed the general aims and architecture of the RTM with our acknowledgement that the model could not be fully developed before the methodology was fully complete. The Licensees submitted a draft scope for development of the model, a key highlight of which is the inclusion of full lifetime benefits of interventions during the risk trading process.

5. Regulatory reporting
The modifications to the NOMs methodology will necessitate new regulatory reporting requirements including changes to the reporting templates in order to accurately express monetised risk. This reporting will facilitate the annual monitoring on NOMs outputs for the remainder of the price control, allow for the implementation of the incentive mechanism at the RIIO-1 close out and ultimately provide an input into the RIIO-2 business plans. Our current expectation is that the development of reporting arrangements will be taken forward through the sector specific workstreams on the incentive mechanism implementation.