

To electricity distribution companies and other interested parties.

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Date: 21 August 2015

Notice of proposal to direct modifications to the Common Network Asset Indices Methodology under Part C of SLC 51

This letter is a notice under Part C of SLC of a proposal to modify the common methodology submitted by the electricity distribution network operators (DNOs) for defining and measuring the health and criticality of their network assets. It sets out the text of the Common Network Asset Indices Methodology that it proposes to direct, specifies the reasons for the Authorities proposals, the date the document provisions should take effect and the period for the licensees to make representations.

The submitted methodology is published as part of the supplementary documents of this letter:

<https://www.ofgem.gov.uk/publications-and-updates/consultation-distribution-network-operators-dnos-common-network-asset-indices-methodology>

Please submit responses to this letter to Aris Kalogeropoulos by 21 September 2015.

1. Background

Our new RIIO (Revenue = Incentives + Innovation + Outputs) price control framework gives a greater focus on outputs and associated secondary deliverables. Secondary deliverables are leading indicators which enable us to monitor companies' long-term performance. The asset health, criticality and loading secondary deliverables quantify the impact of the companies' network expenditure and enable Ofgem, and stakeholders, to see what the DNOs have delivered.

The health index is a DNO-specific composite measure of asset age, condition, fault history and realistic probability of failure. Criticality is a measure of the consequence of asset failure. The load index is a DNO-specific measure of network comparative loading.

The health and load indices (HIs and LIs) were introduced in the previous price control, DPCR5. We introduced criticality indices (CIs) in RIIO-ED1 and combined asset health and criticality into a composite measure of monetised risk. In DPCR5, and for the RIIO-ED1 business plans, the DNOs used their own definitions of these indices.

The RIIO-ED1 electricity distribution licence requires the DNOs to have a Common Methodology for asset health, criticality and monetised risk. Under standard licence condition 51, the licensees had to work together to develop and submit a Common Network Asset Indices Methodology by 1 July 2015. The requirement does not include LIs, as standardised reporting is already in place as part of the RIIO-ED1 regulatory instructions and guidance.

As part of the RIIO-ED1 review, DNOs provided forecasts of their asset health and criticality positions "with intervention" and "without intervention". We used these to create secondary deliverable targets, or deltas, of improvement in asset health, criticality and monetised risk. Following agreement of the common methodology to reflect the new methodology, the DNOs will resubmit their asset health, criticality information and target rebasing proposals. Ofgem will review the proposals and modify where appropriate.

Ofgem is looking to move towards greater use of output benchmarking as well as input benchmarking as part of assessing performance during RIIO-ED1 and to inform the cost and output assessment exercise for RIIO-ED2. We will look to carry out comparisons of expected risk removed in £ against forecast expenditure, including relevant normalisations, where these are required.

The electricity transmission and gas distribution and transmission operators are developing similar common methodologies on health, criticality and monetised risk. All the methodologies will follow the same high level principles.

2. Common methodology requirements

The licence contains the key objectives for the Common Methodology. It should enable:

- (a) the comparative analysis of network asset performance between DNOs over time;
- (b) the assessment of licensee DNO's performance against the Network Asset Secondary Deliverables; and
- (c) the communication of information affecting the Network Asset Secondary Deliverables between the DNO, Ofgem and, as appropriate, other interested parties in a transparent manner.

The methodology should enable the evaluation of risk "trade-offs" between asset categories and the delivery of a risk profile within a single asset category that is different to the target profile, to clearly define the level of under or over-delivery achieved. The methodology should also facilitate the increase of the scope of assets covered by the framework to eventually include all asset categories in the Asset Register.

We have evaluated the Common Network Asset Indices Methodology submitted by the DNOs based on the following criteria. The criteria were developed by Ofgem and were presented to the DNOs through the Common Framework working group in December 2014.

Asset health assessment

- Is capable of providing a degree of consistency in results to make meaningful comparisons across DNOs possible,
- Uses objective and relevant inputs and provides a linkage to Probability of Failure (POF)/Failure rates,
- Enables continuous improvement and refinement through calibration against observable data (where appropriate).

Asset criticality assessment

- Combines safety, environment, network performance and financial consequences into a single, monetised assessment of consequence of failure,
- Is capable of providing consistent results,
- Uses objective and relevant inputs,
- Takes into account the interdependence of network assets,
- Is capable of providing sufficient consistency to make meaningful comparisons across DNOs possible,
- Enables continuous improvement and refinement through calibration against observable data (where appropriate).

Monetised risk calculation

- The calculated value is proportional to expected values,
- Is subject to a "validation" test against anticipated risk across the network,
- Has the ability to aggregate individual asset risk results to calculate the total network risk,
- Enables continuous improvement and refinement through calibration against observable data (where appropriate).

3. Initial findings

We have reviewed the DNOs' submission and present our summary findings in this letter. We provide further detail against each of the criteria in in Appendix 1.

It is clear that the DNOs have worked together in developing the methodology and have sought to develop a comprehensive approach. It is a professional submission on the areas where consensus has been reached with a detailed build-up of how each of the assets are assessed and scored. The DNOs have reached industry-wide agreement on known issues i.e. definition of failure, coastal lines, asset replacement costs etc.

The methodology meets most of the criteria for compliance with SLC 51.6. We expect that the DNOs can develop the methodology to meet the remaining criteria over the next few months. Those areas of the document that are completed are well laid out and take the reader through the steps of the methodology, although the explanations need to be improved for more general readers. Even though the methodology is highly technical, the use of tables for the different factors makes the use of the methodology relatively simple.

We believe further work is required for the methodology to be fully compliant. The methodology does not fully comply with objectives (a) and (c), as they are specified in the licence condition SLC51 Part D. But we believe that the methodology can become fully compliant in the time available, without the Authority needing to resort at this stage to its powers under SLC51.9 to substitute with its own methodology. We propose to direct the DNOs to carry out this further work under Part C of SLC 51 and this letter constitutes the required notice. We attach our proposed direction at Appendix 2.

Further work required

The DNOs should continue their work and run a calibration exercise to validate the methodology. We expect the DNOs to test the methodology on their asset population or a sample of their assets and ensure that the resulting values are appropriate. Based on the results, they should update the tables in Appendix B of the methodology. Although the DNOs have reached an agreement, and provided common definitions for known issues (e.g.

functional failure), the methodology, in some tables in Appendix B, still uses terms like "Normal wear", "Some deterioration" "Substantial Deterioration" etc. Such terms can be interpreted differently by different DNOs. We would encourage the DNOs to continue work to ensure future consistency by providing definitions and guidance on these terms.

The chapter 5, on risk provides limited information. We would like to see a commentary on the calculation of the total network risk from the individual assets, the risk trade-off between assets and how this is expected to feed into the regulatory process. One of the criteria for the methodology is that it enables continuous improvement and refinement through calibration against observable data. The methodology needs to include commentary defining the updating process and how future innovations in operation and maintenance can be taken into account.

There are also editorial corrections, improvements and clarifications that we would expect the DNOs to make ahead of the resubmission. Due to the complexity of the methodology, worked examples should be included in the methodology or in an accompanying guidance document. The examples should include a range of assets which vary in terms of complexity. Some of the tables and data in methodology do not include references. The source of the information should be referenced, where possible. The DNOs should ensure consistency with other industry studies on constants e.g. cost of CO₂, cost of injury etc.

Furthermore certain critical areas of the methodology need further clarification, e.g. the ageing reduction factor and why this only applies to forecast health scores should be explained further. Finally we expect small errors and data inconsistencies e.g. Table 115, to be corrected as part of the review process.

4. Conclusion

Overall our view is that although the methodology is well presented and structured, some further work is required in terms of the risk reporting and calibrating the tables in the appendixes. We propose to direct the DNOs to submit a revised version of the methodology by December. This submission should include a list of all the changes made.

5. Next steps

We welcome views on this notice; our assessment; and our proposed way forward. Please send you responses, preferably by email, to aris.kalogeropoulos@ofgem.gov.uk by 21 September 2015.

Unless marked confidential, all responses will be published by placing them on our website. We intend to publish our decision and direct on the common asset methodology no later than end of September 2015.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Anna Rossington', written in a cursive style.

Anna Rossington
Head of RIIO Implementation

Appendix 1: Assessment of the DNOs submitted methodology against Ofgem’s criteria

Health Assessment	
Is capable of providing a degree of consistency in results to make meaningful comparisons across DNOs possible	The methodology is well structured and leads the assessment of health through a defined process which is built upon earlier health reporting. Care will be required during the operation of the methodology to ensure consistency is maintained via consistent application of assessments within the methodology: The use of terms such as “Normal wear”, “Some deterioration” “Substantial Deterioration” and many other classifications within the Calibration – Probability of Failure appendix B, have a degree of subjectivity.
Uses objective and relevant inputs and provides a linkage to Probability of Failure (POF)/Failure rates	This criterion appears well met (not based on an engineering assessment but on the peer review by the members of the working group).
Enables continuous improvement and refinement through calibration against observable data (where appropriate)	The methodology provides an excellent basis for this criterion. Need to ensure innovations in operational and maintenance can be assimilated
Criticality Assessment	
Assimilates Safety, Environment, Network Performance and Financial consequences into a single, monetised assessment of consequence of failure	Criteria fully met.
Is capable of providing consistent results	By the use published reference tables within the methodology which are developed from management accounts data sources across the companies.
Uses objective and relevant inputs	This criterion appears well met (not based on an engineering assessment but on the peer review by the members of the working group).
Takes into account the interdependence of network assets	It is unclear as little detailed commentary refers to the issue. It could be made more visible through specific examples.
Is capable of providing sufficient consistency to make meaningful comparisons across DNOs possible	Without doubt there will be errors introduced by the banding and averaging elements of critically into four bands per asset type. However, there is no evidence to suggest that the output will not meet the requirements of this condition and any banding errors thus introduced would not get in the way of cross DNO comparisons.
Enables continuous improvement and refinement through calibration against observable data (where appropriate)	The methodology provides an excellent basis for this criterion.
Monetised Risk Calculation	
The calculated value is proportional to expected values	The development of the methodology has this criterion at its heart and provided the validation of the inputs is carried out it is expected it would meet this requirement.
Is subject to a “validation” test against anticipated risk across the network	This validation is considered embedded within the methodology. However, we consider that is important to have an initial validation and calibration exercise and parameters refined before the methodology is finalised .
Has the ability to aggregate individual asset risk results to calculate the total network risk	Inherently the methodology has this ability although it has little detailed commentary regarding the application of this ability and how it is expected to feed into the regulatory process.
Enables continuous improvement and refinement through calibration against observable data (where appropriate).	The methodology provides an excellent basis for this criterion.

To: Distribution Services Providers

Draft direction under Part C of SLC 51 (Network Asset Indices Methodology) of the Distribution Services Providers electricity distribution licences

1. Each of the companies to whom this Direction is addressed (the licensees) holds an electricity distribution licence (licences) under section 6(1)(c) of the Electricity Act 1989 (the Act).
2. Under paragraph SLC 51.5, the licences had to submit by July 1st 2015 their Common Network Asset Indices Methodology to the Gas and Electricity Markets Authority (the Authority) for approval.
3. As set out in SLC 51.6 the Common Network Asset Indices Methodology must
 - (a) facilitate the achievement of the Network Asset Indices Methodology Objectives set out in Part D of the condition;
 - (b) enable the objective evaluation of performance against the Network Asset Secondary Deliverables;
 - (c) be implemented by the licensee through appropriate amendment of its own Network Asset Indices Methodology in accordance with the provisions of Part A of the condition; and
 - (d) be capable of being modified from time to time in accordance with the provisions of Part I of the condition.
4. As set out in SLC 51 Part D on the Network Asset Indices Methodology Objectives, the Common Network Asset Indices Methodology should enable:
 - (a) the comparative analysis of network asset performance between DNOs over time;
 - (b) the assessment of licensee DNO's performance against the Network Asset Secondary Deliverables; and
 - (c) the communication of information affecting the Network Asset Secondary Deliverables between the DNO, Ofgem and, as appropriate, other interested parties in a transparent manner.
5. The Authority assessed the methodology for compliance with the requirements of SLC51.6 in accordance with criteria developed by the Authority in consultation with the Common Framework Working Group, as set out in Appendix 1 of the notice of a proposal to make a direction under Part C of SLC dated [21 August].
6. Having carried out its assessment the Authority concludes that the methodology is capable of being modified in accordance with this direction in a manner which it will enable it to comply with the provisions of paragraph SLC 51.6, but, for the reasons set out at the paragraph on initial findings of the Notice of proposal requires the changes in Annex 1 to be made to it in order for it to comply with SLC 51.6.
7. The Authority gave notice under Parts C of SLC 51 (Network Asset Indices Methodology) of the licences (the Notice) on 21 August 2015 that it proposed to issue a direction in accordance with SLC 51.8.
8. The Notice required any representations to be made on or before 21 September 2015.

9. The Authority is directing the modifications in order to comply with the provisions of paragraph SLC 51.6.

Direction

10. The Authority hereby directs under SLC 51C the licensees:

- to modify that methodology, in the manner and extend specified in Annex 1 of this direction,

11. The updated methodology should be submitted to the Authority by 15 December 2015.

12. This direction will take effect on and from the 30 September 2015.

Anna Rossington - Head of RIIO Implementation



**Authorised on behalf of the
Gas and Electricity Markets Authority**

21 August 2015

Annex 1: List of changes

1. Run a calibration exercise. Apply the methodology to a significant sample of the licensee's asset population. According to the results update the numbers in the tables of Appendix B.
2. Run a validation exercise. Calculate the risk for certain assets and compare the answer to known risks across the network. Present the results in Chapter 4 and update the tables in Appendix B, where appropriate.
3. Provide further information on risk (Chapter 5), focusing on risk reporting and risk trade-off between assets.
4. Following SLC 51 Part I, define the process for updating the common methodology, including version control.
5. Provide further information on asset health assessment (Chapter 4), to ensure innovations in operation and maintenance can be assimilated.
6. Provide reference/source of data (where appropriate).
7. Provide further information on how the methodology takes into account the interdependence of network assets (Chapter 7).
8. Define or provide guidance for the health assessment terms used in Appendix B in the following tables (where applicable):

Tables:32,34-36,38-39,41,42,44-46,48,51-53,56-58,61-62,64,67,68,70,72-93,97,101,110,116-125,127,166,173