



Making a positive difference
for energy consumers

To gas distribution network
companies and other interested
parties.

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Date: 6 November 2015

Notice of proposal to direct modifications to the NOMs Methodology under Special Condition 4G of the gas transporter licence

This Notice is a notice under paragraph 4G.10 of Special Condition 4G of the gas transporter licence of a proposal to modify the NOMs Methodology submitted by the gas distribution networks (GDNs) for defining and measuring the health and criticality of their network assets. It sets out the text of the Network Output Measures Health & Risk Reporting Methodology & Framework ("NOMs Methodology") that it proposes to direct, the reasons for the Authority's proposals are specified in Appendix 1, the period for the licensees to make representations and the proposed date for the document provisions to take effect.

The submitted NOMs Methodology is published as part of the supplementary documents of this Notice.

Please submit responses to this Notice to Ian.bagworth@ofgem.gov.uk by 4 December 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 risk secondary deliverables quantify the impact of the companies' network expenditure and enable Ofgem, and stakeholders, to see what the GDNs have delivered.

Unlike the electricity distribution licence (under which the health and load indices (HIs and LIs) were introduced in the previous price control, DPCR5), the gas transporter licence has not previously required GDNs to formally report on health or criticality and therefore this reporting requirement starts at a different level of maturity. As part of the RIIO-GD1 submissions companies included with their business plans these factors via indices (HI's for health and CI's for Criticality) based upon the companies own methodologies for their determination.

These submissions showed a range of interpretations and hence a wide range of results. In order to provide greater comparability, the RIIO-GD1 gas transporter licence requires the

GDNs to have a NOMs Methodology for asset health, criticality and risk. Under Special Condition 4G of the gas transporter licence, the licensees had to work together to develop and submit a NOMs Methodology for Network Output Measures.

The GDNs have been working diligently on the requirement for a NOMs Methodology since April 2013 and this work was initially based upon the indices originally presented, HI1-5 and CI1-4. During this period much learning by all parties was achieved, although an acceptable translation of the indices into a measure of risk across assets was not considered achievable using this approach. The companies therefore, with our support, moved to the current proposals which are directly aimed at assessing the monetised risk of each asset. Given the amount of work required to develop the modelling for all of the assets required by the revised NOMs Methodology the companies have provided a fully documented approach for the first two asset classes of mains and services and have a programme of activities which will complete all assets by March 2016.

As part of the RIIO-GD1 review, GDNs provided forecasts of their asset health and criticality positions “with intervention” and “without intervention”. We used these to establish initial secondary deliverable targets, or deltas, of improvement in asset health, criticality and monetised risk. Following agreement of the NOMs Methodology and to reflect the new requirements, the GDNs 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-GD1 and to inform the cost and output assessment exercise for RIIO-GD2. We will look to carry out comparisons of expected risk removed in Pound Sterling against forecast expenditure, including relevant normalisations, where these are required.

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

2. NOMs Methodology requirements

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

- a) the comparative analysis of network asset performance between GDNs over time; and
- b) the communication of information affecting the Network Asset Secondary Deliverables between the GDNs, Ofgem and, as appropriate, other interested parties in a transparent manner.

The NOMs 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 NOMs 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 Network Output Measures Health & Risk Reporting Methodology & Framework submitted by the GDNs based on the following criteria, which form a consistent list to that used to assess the electricity distribution methodology.

Asset health assessment

- Is capable of providing a degree of consistency in results to make meaningful comparisons across GDNs 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 GDNs possible,
- Enables continuous improvement and refinement through calibration against observable data (where appropriate).

Monetised risk calculation

- 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 GDNs' submission and present our summary findings in this Notice. We provide further detail against each of the criteria in Appendix 1.

It is clear that the GDNs have worked together in developing the NOMs Methodology and have sought to develop a comprehensive approach. It is well presented and structured on the areas where consensus has been reached with a detailed build-up of how each of the assets are assessed and scored. The GDNs have reached consensus on known issues i.e. definition of failure and asset replacement costs etc.

We believe the NOMs Methodology meets the criteria for compliance with Special Condition 4G of the gas transporter licence albeit some demonstration of the success of the NOMs Methodology will only be achieved once all assets have been completed. The GDNs have committed to completing the NOMs Methodology criteria for the remaining primary assets by March 2016. Those areas of the document that are completed are well laid out and take the reader through the steps of the Common Methodology, although some elements of the explanation would benefit from improvement for more general readers. Even though the NOMs Methodology is highly technical, the structured approach of the NOMs Methodology via principles first and detailed assessment in the event tree analysis subsequently aims to provide the reader with the reasoned steps in the Common Methodology.

We believe further work is required to demonstrate that the NOMs Methodology is fully compliant for all primary assets. The methodology has not demonstrated that it is fully

compliant for all primary assets with the objectives as they are specified in the paragraph 4G.4. But we believe that the methodology can become fully compliant in the time detailed in the implementation plans, without the Authority needing to resort at this stage to its powers under paragraph 4G.11 to substitute its own methodology.

Further work required

The programme of work submitted in the accompanying Implementation Plan leading to all asset groups being documented by March 2016 is completed to the same standard as that delivered for the asset groups mains & services.

The initial comprehensive risk assessment report of all assets is delivered in July 2016 using the completed Common Methodology. This report shall include an assessment of the current state of the assets as of 31st March 2016 and the forecast risk at the end of RIIO-GD1, "With Intervention" and "Without Intervention".

A validation exercise is carried out via the governance arrangements set-out in the NOMs Methodology which will confirm or otherwise the suitability of the parameters being used within the NOMs Methodology to deliver an appropriate assessment of the total risk from asset failure, and that the risk between asset groups and GDNs is comparable. This validation review will be completed such that the results are available for implementation in the assessment of risk carried as at 31st March 2017 and delivered in July 2017.

Using the July 2017 risk assessment of "With Intervention" and "Without Intervention" a tracking mechanism is delivered for the second half of the RIIO-GD1 period which maps the original secondary deliverables of the NOMs targets as presented in the RIIO-GD1 business plans to a restatement of these same targets using the new methodology. The tracking mechanism will also document the achievement of targets already delivered in the first half of the period (April 2013-March 2017). The GDNs will need to provide evidence, within this tracking, as to the reasons behind their own belief that the outputs targets using the new methodology have an equivalence of delivery of those originally expressed in the business plans.

A revised version of the NOMs Methodology is published following the validation tests in 2017 which takes account of lesson learnt in delivering the 2017 assessment and comments received on the clarity and readability of the methodology.

4. Conclusion

Overall our view is that although the NOMs Methodology is well presented and structured, the methodology has not demonstrated that it is fully compliant for all primary assets with detailed documentation for a number of asset groups still ongoing. We propose to direct the GDNs to complete their declared implementation plan and demonstrate that the NOMs Methodology is fully compliant for all primary assets and meets the objectives specified in paragraph 4G.4. To undertake a validation of the outputs using the full set of asset assessments due in July 2016 and submit a revised version of the NOMs Methodology taking account of the validation, lessons learnt and comments received by December 2017. This submission should include a list of all the changes made. We attach our proposed direction at Appendix 2.

5. Next steps

We welcome views on this notice; our assessment; and our proposed way forward. Please send you responses, preferably by email, to ian.bagworth@ofgem.gov.uk by 4 December 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 December 2015.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Paul Branston', enclosed within a light grey rectangular border.

Paul Branston

Associate Partner, Gas Networks

Appendix 1: Assessment of the GDNs submitted methodology against Ofgem's criteria

Health Assessment	
Is capable of providing a degree of consistency in results to make meaningful comparisons across GDNs possible	The methodology is well structured and leads the assessment of health through a defined process of the analysis of the failure modes for each asset group.
Uses objective and relevant inputs and provides a linkage to Probability of Failure (POF)/Failure rates	This criterion appears well met and the methodology provides an excellent platform for enhanced inputs as experience and knowledge grows.
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	The methodology details a fully structured approach to the assessment of criticality via an event tree analysis. A number of the key global attributes are specified within the methodology, whereas other are determined by each network based upon transactional data which will be the subject of a validation process. The methodology provides an inherent opportunity for consistent assessment within a reasonable band of values. The structured approach will enable simple and transparent challenge of materially different assessments.
Uses objective and relevant inputs	This criterion appears very well met by application of a clear breakdown of the cause and effect via the event tree analysis.
Takes into account the interdependence of network assets	The methodology is intended to fully meet this requirement, however, the only assets which have been subject to the full analysis phase do not have interdependence characteristics. The implementation of this consideration has not yet been demonstrated.
Is capable of providing sufficient consistency to make meaningful comparisons across GDNs possible	The methodology is well structured and intended to deliver this criterion. The methodology does provide for GDN specific variations in parameters used with the calculation. It is our view that these

	variations are intended to reflect the actual nature of the assets deployed and operating conditions and therefore support this ability for local variations. However, we will require monitoring of the application of the methodology to ensure any variations between GDNs are appropriate.
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 that a full validation is carried out to ensure the assessment of risk is comparable across assets and between GDNs. This validation test cannot be completed until all the modelling of all assets has been completed and the results obtained.
Has the ability to aggregate individual asset risk results to calculate the total network risk	Inherently the methodology has this ability and is a key principle of its development.
Enables continuous improvement and refinement through calibration against observable data (where appropriate).	The methodology provides an excellent basis for this criterion.

Appendix 2

To:

National Grid Gas plc (with respect to its gas distribution networks)

(Company Number 02006000)

Northern Gas Networks Limited

(Company Number 05167070)

Scotland Gas Networks plc

(Company Number SC264065)

Southern Gas Networks plc

(Company Number 5167021)

Wales and West Utilities Limited

(Company Number 05046791)

Draft direction under Part D of SLC 4G (Methodology for Network Output Measures) of the Gas Distribution Networks gas transporters licences

1. Each of the companies to whom this Direction is addressed (the licensees) holds a gas transporters licence (licences) under section 7(2) of the Gas Act 1986 (the Act).

2. Under paragraph SLC 4G.2, the licences had to submit by April 1st 2013 (or such later date to which the Authority may consent in writing) a Methodology for Network Output Measures common to all Gas Distribution Network Operators to the Gas and Electricity Markets Authority (the Authority) for approval.

3. As set out in SLC 4G.2 the Methodology for Network Output Measures must

(a) facilitate the achievement of the NOMs Methodology Objectives set out in Part B of the condition;

(b) enable the objective evaluation of the Network Output Measures set out in Part C of the condition;

(c) be implemented by the licensee in accordance with the provisions of Part E of the condition; and

(d) be capable of being modified from time to time in accordance with the provisions of Part F of the condition.

4. As set out in SLC 4G Part B on the NOMs Methodology Objectives, the Network Output Measures Methodology should enable:

(a) the comparative analysis of performance overtime between geographic area of, and Network Assets within, the pipe-line system to which the licences relates; and

(c) the communication of relevant information regarding the pipe-line system to which the licence relates between the Licensee, the Authority and, as appropriate, other interested parties in a transparent manner.

5. The Authority assessed the methodology for compliance with the requirements of SLC 4G.5 in accordance with criteria developed by the Authority in consultation with the Gas Safety & Reliability Working Group, as set out in Appendix 1 of the "Notice of proposal to direct modifications to the NOMs Methodology under Special Condition 4G of the gas transporter licence" dated [6 November] ("Notice").

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 4G.5. However, for the reasons set out in the "Initial findings" section of the Notice the NOMs Methodology requires the changes in Annex 1 to be made to it in order for it to comply with SLC 4G.5.

7. The Authority gave Notice under Parts D of Special Condition 4G of the licences on 6 November 2015 that it proposed to issue a direction in accordance with Special Condition 4G.10.

8. The Notice required any representations to be made on or before 4 December 2015.

Direction

9. The Authority hereby directs under SLC 4G.10 of Special Condition G4 the licensees to modify the NOMs Methodology, in the manner and extend specified in Annex 1 of this direction.
10. The updated NOMs Methodology should be submitted to the Authority by 31 March 2016.
11. This direction will take effect on and from the 30 December 2015.

Annex 1: List of Work to be Completed

1. All asset groups completed as per Implementation Plan March 2016.
2. A comprehensive reporting of the risk assessment for all asset groups in July 2016 using the NOMs Methodology.
3. A validation exercise is carried such that the outcome of the validation is available for the assessment in March 2017.
4. Tracking is completed by July 2017 to establish targets using the new NOMs Methodology to ensure the new targets have an equivalent impact as the original targets.
5. A revised NOMs Methodology is published following a 2017 review.