Consultation

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Consultation on Modifications to National Grid Gas Transmission's Network Asset Risk Metric (NARM) Methodology

Subject	Details
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We[1] are consulting on modifications to the Network Asset Risk Metric (NARM) Methodology proposed by National Grid Gas plc (NGGT). We would like views from licensees and gas network customers, particularly those with an interest in NARM. We would also welcome responses from other stakeholders and the public.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at Ofgem.gov.uk/consultations. If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in a separate appendix.

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[1] The terms 'we', 'us', 'our' refer to the Gas and Electricity Markets Authority. Ofgem is the office of the Authority.

Contents

1. Introduction

1.1.   Gas and electricity network companies are required to provide safe, secure, reliable and efficient energy network services. They are funded to carry out activities such as the replacement or refurbishment of assets in order ensure that the risks to consumers associated with network failure are maintained within reasonable bounds.

1.2.   Each company has a Network Asset Risk Metric (NARM) Methodology which details how they calculate Monetised Risk (MR) on their network. The outputs and funding associated with NARM-related asset management activities for National Grid Gas Plc (NGGT) during RIIO-2 can be found in Appendix 1 to Special Condition (SpC) 3.1 of its Gas Transporter Licence .[2]

1.3.   In 2018, we outlined development work that we expected NGGT to undertake to improve its Network Output Measures (NOMs) Methodology,[3] which became its NARM Methodology on 1 April 2021 per SpC 9.2.4. The changes that we are now consulting on have been proposed by NGGT following development work it undertook in these areas, as well as some further changes resulting from the adoption of new metrics in RIIO-2 e.g., Long Term Risk Benefit[4] (LTRB), and Unit Cost of Risk Benefit[5] (UCR).

1.4.   SpC 9.2.6 places an obligation on licensees to, at least once every year, 'review the NARM Methodology to identify scope for modifications that would better facilitate the achievement of the NARM Objectives.' The NARM Objectives are laid out in SpC 9.2.5.[6]

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[2] [Decision on the proposed modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions - 1 April 2022 | Ofgem](): National Grid Gas plc - NTS - Special Conditions_Clean_030222.pdf, SpC 3.1 Appendix 1, pg. 66

[3] NOMs was the RIIO-1 equivalent of NARM. We outlined our expectations relating to methodology development in our [Decision to not reject the modified gas transmission Network Output Measures (NOMs): Appendix 1]().

[4] This metric applies the risk reduction arising from intervention on an asset over the expected lifetime of the intervention, starting from the final year of the RIIO-2 price control. This gives a more accurate view of the impact of interventions and differs from the previous Single-Year Risk Benefit which applied the reduction to the final year of the price control.

[5] The average cost of delivering a single unit of Monetised Risk Benefit (expressed in R£) for a given intervention in an asset or group of assets. If an intervention on an asset costs £100 and delivers a Monetised Risk Benefit of 50 R£, it would have a Unit Cost of Risk benefit of £2 per unit of Risk Benefit i.e. 2£/R£.

[6] [Decision on the proposed modifications to the RIIO-2 Transmission, Gas Distribution and Electricity]()

1.5.   We are working with other sectors, namely electricity transmission, electricity distribution and gas distribution, as part of the ongoing obligation to keep the NARM Methodologies under review. Further modifications will likely be required as a result of this work and expect to publish further consultations in due course.

1.6.   We discuss our plans for further refinement of the existing NARM methodologies in Chapter 3.

Context and related publications

1.7.   Network asset risk relates to the consequence of failure of a network asset and the probability of a failure occurring. If a network company does not maintain, replace, or refurbish its assets, the probability of those assets failing will generally increase over time, and so would the consequences of failure.

1.8.   The NARM mechanism is designed to ensure that companies take necessary steps to ensure that risk on their network is kept at a reasonable level. Each licensee is obligated to have in place and act in accordance with a NARM Methodology that facilitates the achievement of the NARM Objectives.[7]

1.9.   Differences in asset bases mean that there are differences in the NARM methodologies across the four different network sectors. However, the fundamental approach is consistent across all sectors. The probability of asset failures occurring are combined with the consequences of those failures occurring to produce a valuation of risk, known as Monetised Risk (MR). Licensees are funded to deliver a reduction in MR relative to a 'without intervention' position[8] during the price control. The total reduction in MR a

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System Operator licence conditions - 1 April 2022 | Ofgem: National Grid Gas plc - NTS - Special Conditions_Clean_030222.pdf
[7] National Grid Gas plc, Gas Transporter Licence, Special Condition 9.2.3
[8] A 'without intervention' position is the total risk on the network if no replacement or refurbishment of assets had taken place, as compared to a 'with intervention' position, which is the total risk on the network after interventions on assets have been made. The benefit of interventions, known as Risk Benefit, is given by the difference between these two positions.

given licensee is funded to deliver is referred to as its Baseline Network Risk Output (BNRO).

1.10. The outputs and funding for NARM are set out in Appendix 1 to SpC 3.1 for all licensees. Further details on how NARM functions can be found in the NARM Handbook[9] and SpCs 3.1 and 9.2 of their licences.

1.11. The NOMs Methodology was the methodology used in RIIO-1 to ensure that companies were keeping network risk at a reasonable level. It used the same fundamental approach as the NARM Methodology, namely the combination of probability and consequence of asset failure to provide a view of network risk. The NOMs Methodology that was in effect on 31 March 2021 was deemed to be the NARM Methodology in effect from 1 April 2021 until superseded, as per SpC 9.2.4.

1.12. The scope of this consultation is limited to NGGT's NARM Methodology. We expect that further consultations on proposed modifications for the NARM Methodologies for other licensees will take place in 2023.

1.13. The key publications related to this consultation are:

- NGGT's current NARM Methodology[10]
- Direction to modify the GT NOMs methodology for RIIO-2[11]
- NGGT's public consultation on its proposed methodology modifications[12]
- NARM Handbook[13]
- Special Licence Conditions 3.1 and 9.2[14]

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[9] [RIIO-2 Transmission, Gas Distribution and Electricity System Operator Licence Conditions](): NARM Documents, NARM Handbook v3.1

[10] [Notice of intention not to reject National Grid Gas Transmission's Network Output Measures (NOMs) Methodology | Ofgem]()

[11] [Decision to not reject the modified gas transmission Network Output Measures (NOMs): Appendix 1]().

[12] [NARM Methodology Consultation | National Grid Gas]()

[13] [RIIO-2 Transmission, Gas Distribution and Electricity System Operator Licence Conditions](): NARM Documents, NARM Handbook v3.1

[14] [RIIO-2 Transmission, Gas Distribution and Electricity System Operator Licence Conditions](): National Grid Gas plc - NTS - Special Conditions_Clean_030222.pdf

1.14. NARM-specific terminology associated with this consultation has been included in 'Appendix 2 – NARM Glossary'. A complete list of all NARM terminology can be found in the NARM Handbook.[15]

What are we consulting on?

1.15. As part of our decision to approve NGGT's NOMs Methodology (now its NARM Methodology) in 2018, we gave an overview of our expectations for its future NARM Methodology development work.[16]

1.16. This consultation seeks views on NGGT's proposed modifications to its NARM Methodology and whether these modifications would better facilitate the achievement of the NARM Objectives, as laid out in SpC 9.2.5. The objectives have been included in 'Appendix 1 – NARM Objectives' for ease of reference.

1.17. A draft version of a direction to approve modifications to NGGT's NARM Methodology under SpC 9.2 has been published alongside this consultation.

Consultation stages

1.18. Any interested parties may make representations within 28 days of publication date. The closing date for representations to be submitted to us is 13 December 2022.

1.19. Once the consultation period has concluded, we will consider all responses and make a decision on whether to: (a) approve the proposed modification; (b) approved the proposed modification with amendments; or (c) reject the proposed modification.

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[15] Decision on the proposed modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions - 1 April 2022 | Ofgem: NARM Documents 030222, NARM_Handbook_v3.1.pdf, pg. 46
[16] Decision to not reject the modified gas transmission Network Output Measures (NOMs): Appendix 1

Figure 1: Consultation stages

Stage 1		Stage 2		Stage 3		Stage 4
Consultation open	►	Consultation closes (awaiting decision). Deadline for responses	►	Responses reviewed and published	►	Consultation decision/policy statement
15/11/2022		**13/12/2022**		**TBC**		**TBC**
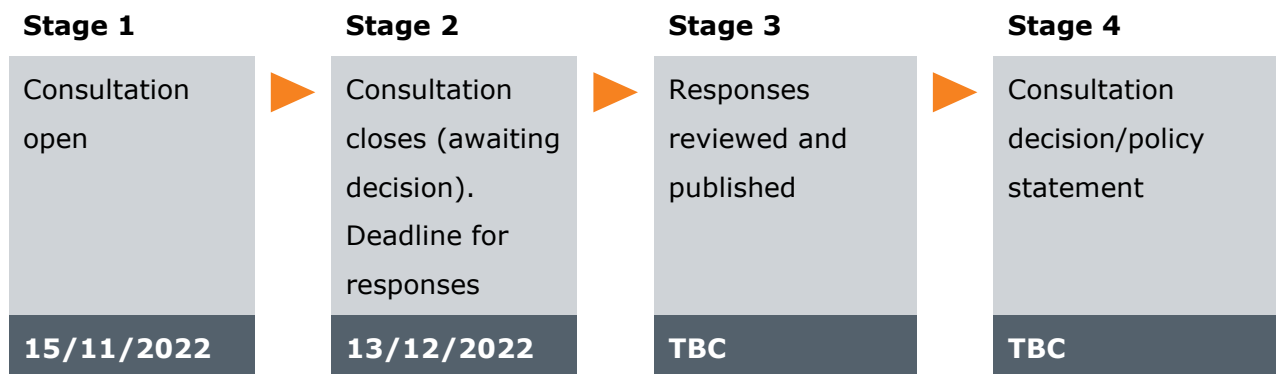
How to respond

1.20. We want to hear from anyone interested in this consultation. Please send your response to the person or team named on this document's front page.

1.21. We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can.

1.22. We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

Your response, data and confidentiality

1.23. You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.24. If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you *do* wish to be kept confidential and those that you *do not* wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

1.25. If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see 'Appendix 4 – Privacy notice on consultations'.

1.26. If you wish to respond confidentially, we'll keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

General feedback

1.27. We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Any further comments?
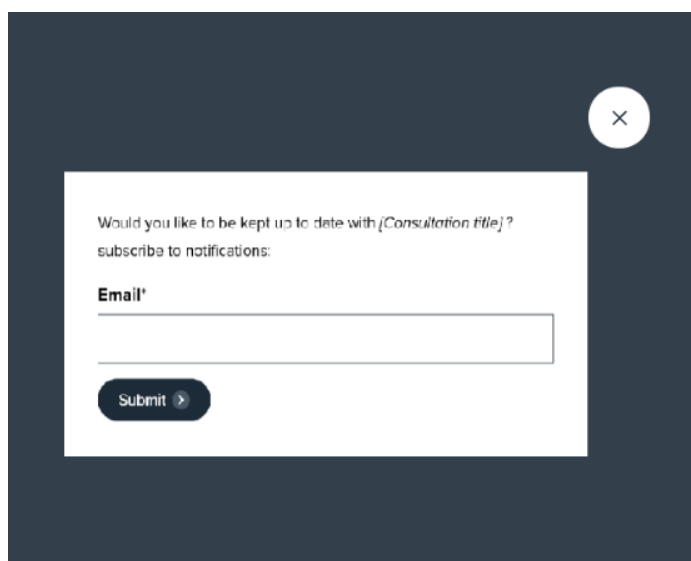
Please send any general feedback comments to stakeholders@ofgem.gov.uk

How to track the progress of the consultation

You can track the progress of a consultation from upcoming to decision status using the 'notify me' function on a consultation page when published on our website. Ofgem.gov.uk/consultations.

Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:

| Upcoming | | Open | | Closed (awaiting decision) | | Closed (with decision) |

2. Modifications to NGGT's NARM Methodology

Section summary

This chapter summarises the modifications proposed by NGGT to its NARM Methodology and sets out our minded-to view on these proposals.

Question 1: Do you agree with our assessment of the modifications to NGGT's NARM Methodology?

Question 2: Do you consider there are further modifications to NGGT's NARM Methodology that could be made which would better facilitate the achievement of the NARM Objectives?

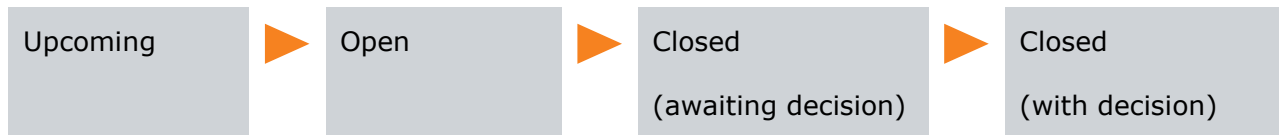2.1. The modifications proposed by NGGT have been divided into two categories. The first are those changes arising from the Calibration, Testing, and Validation[17] (CTV) of its current NARM Methodology.

2.2. The second category of changes are those which have not arisen from CTV, e.g. the addition of documentation detailing NGGT's methodology for deriving of Long-Term Risk Benefit (LTRB), which is used to define its Baseline Network Risk Outputs (BNRO) for RIIO-2.

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[17] Calibration, Testing, and Validation is the process whereby NARM methodology outputs are validated against NGGT's expectations and independent objective measures. In instances where expectations are not met, the inputs, data or models should be recalibrated, tested and then validated again against expectations.

Modifications resulting from CTV

2.3.   In 2018, we issued our decision not to reject NGGT's NOMs Methodology. As part of that decision, we outlined areas of NGGT's methodology that we expected it to develop further.[18]

2.4.   One element of this was the expectation that NGGT would undertake CTV in order to validate the methodology outputs. If the outputs were not fully validated, we stated that the inputs, data or models, should be recalibrated and suitably tested and validated.

2.5.   NGGT has now concluded the CTV of its methodology. Within its validation report, NGGT states that it aimed to confirm the model outputs were sensible from an engineering and industry perspective by involving external consultants to conduct an expert review. The inputs and outputs of the final versions of the models have been reviewed by Pipeline Integrity Engineers (PIE) Limited, who conducted further reviews on the supply and demand models used to calculate its Availability and Reliability (AR) risk.[19]

2.6.   NGGT submitted complete, unredacted versions of these expert reviews to Ofgem. A summary of PIE's conclusions and recommendations can be found in Chapter 6 of the publicly available version of NGGT's validation report.[20]

2.7.   NGGT has detailed the modifications it is proposing following this CTV process in Chapter 9 of its validation report.[21] A summary of each of the proposed changes which have materially affected the risk valuations has been included below.

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[18] Decision to not reject National Grid Gas Transmission's Network Output Measures (NOMs) Methodology: Appendix 1, pg. 3
[19] Availability and Reliability (AR) risk refers to NGGT's ability to transmit gas from shippers to downstream consumers and any commercial or statutory compensation it may be required to pay if it fails to do so. AR risk is limited to unplanned outages. Further information can be found in the Chapter 3 of NGGT's Service Risk Framework Document.
[20] NGGT NARMs Methodology Validation Report 2.0: Section 6, pg. 59
[21] NGGT NARMs Methodology Validation Report 2.0: Section 9.2, pg. 103

Update to demand scenario

2.8.   NGGT proposes the adoption of a '1-in-20' demand scenario[22] using Future Energy Scenario 2021 base demands and Steady Progression future demands.[23] The current version of the methodology uses an average high winter's day scenario.

2.9.   During the expert review of the models, PIE noted that there is a legal requirement for NGGT to design for '1-in-20' conditions.[24] The change has therefore been proposed to align with this requirement.

Ofgem's minded-to position

2.10.   We consider that the proposed changes to the supply and demand scenarios are appropriate. In our view, by aligning the supply and demand assumptions for NARM with those used for design, NGGT can better facilitate the achievement of the NARM Objective in SpC 9.2.5(e) to 'explain and justify… the licensee's investment plans and… outturn delivery'.

2.11.   However, while we recognise the benefit in adopting the '1-in-20' scenario, there may be outcomes which would affect the prioritisation and cost of future intervention plans which our analysis has not fully considered. We would therefore particularly welcome views on the implications of the change in supply and demand scenarios.

Revised approach to constraint costs

2.12.   NGGT is proposing that constraint costs for terminals and offtakes should be directly proportional to customer demand under the '1-in-20' supply and demand scenario. It was previously assumed that constraint costs were independent of the flow at the

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[22] A 1-in-20 scenario means one in which the availability of a supply of gas would equal the levels of peak daily demands which would be exceeded in only 1 year out of 20.
[23] The Future Energy Scenarios sets out credible ways that the UK can achieve Net Zero by 2050, as well as the UK Government's commitment to a decarbonised electricity system by 2035. Each scenario considers how much energy we might need; where it could come from; and how a reliable energy system can be maintained. Steady Progression represents the slowest credible route to decarbonisation. More information can be found here: Future Energy Scenarios | National Grid ESO
[24] Gas Transporters Licence, Standard Special Condition A9 2(b)

terminal at the time of the outage. Terminal flows and customer demands under each scenario would be taken from NGGT's hydraulic modelling solution under this proposal.

2.13. NGGT is proposing this change to ensure a more accurate valuation of constraint costs.

Ofgem's minded-to position

2.14. We consider that the proposed calculation of constraints costs are appropriate as in our view they will result in a more accurate calculation of risk by recognising and accounting for the relationship between demand at the time of outage and the associated constraint costs. This modification would better facilitate the achievement of the NARM Objective in SpC 9.2.5(c) to provide 'robust estimation of… Monetised Risk'.

Update to loss of capability valuation

2.15. NGGT proposes to update the prices for entry points using the Quarterly System Entry Capacity (QSEC) Reserve and Step Prices.[25] It also proposes that these prices are reviewed annually and any significant changes to overall monetised risk resulting from a change in entry/exit constraint cost valuations addressed through a material change process, i.e. a rebasing of NGGT's Network Risk Outputs (NROs).

2.16. NGGT is updating the prices used for entry/exit capacity constraint costs in order to make the risk valuation as accurate as possible.

Ofgem's minded-to position

2.17. We consider that the proposed updates to prices used for entry/exit capacity constraint costs are appropriate as in our view they should result in a more accurate calculation of monetised risk by updating the associated parameter values. This consequently better facilitates the achievement of the NARM Objective in SpC 9.2.5(c) which is concerned with the provision of a 'robust estimation of… Monetised Risk'.

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[25] Capacity gives shippers an entitlement to flow gas onto the National Transmission System. A shipper needs to buy one unit of capacity in order to flow one unit of energy onto the system. Units for both capacity and energy are in kWh/day. The QSEC auction is one of three long-term auctions that are held for firm entry capacity. More information can be found here: Entry capacity | National Grid Gas

Removal of flow swap capability

2.18. NGGT's view is that, under the proposed '1-in-20' scenario, in the event of an unplanned outage, it is unlikely that gas distribution networks (GDNs) would be able to accept the request to use alternative offtakes. NGGT therefore considers that all capability to 'flow-swap' within its AR risk modelling should be removed.

2.19. NGGT states that this modification means the full risk resulting from the loss of a specific exit point is now modelled. Under the current methodology, risk can be mitigated by the utilisation of the flow-swapping capability in the event that the capability exists. The removal of this assumption therefore leads to an increase in AR risk, one of the five categories used within NGGT's Service Risk Framework.[26]

Ofgem's minded-to position

2.20. We consider that in light of the proposed updates to the supply and demand scenarios, the removal of the potential to flow-swap with the GDNs is appropriate. In the event that there would be an unplanned offtake outage under '1-in-20' conditions, it is unlikely that GDNs would be able to accept NGGT's flow-swap request. Continuing to use the previous 'flow-swap' assumption would result in an underestimation of risk.

2.21. In our view, by accounting for the realistic consequences of specific scenario conditions, namely the likely GDN response, that this modification would better facilitate the achievement of the NARM Objective in SpC 9.2.5(c) to provide 'robust estimation of… Monetised Risk'.

Increase in loss of supply compensation

2.22. NGGT proposed an update to the compensation charge in cases where customers experienced a loss of supply. The submitted methodology updated the value to £30 per property per day from the previous £20 per property per day.

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[26] The Service Risk Framework (SRF) aims to provide a consistent method for assessing and articulating the level of monetised risk associated with service issues arising from an asset failing to perform. Further detail can be found in NGGT's NARM Methodology (NGGT Methodology for NARMs, Section 6, pg. 12).

2.23. NGGT aimed to reflect the most up-to-date amount payable in the event of a loss of consumer service in order to make the risk valuation as accurate as possible in line with RIIO-1 requirements. It should be noted that this risk is modelled as a societal cost as the compensation is paid by the gas supplier rather than the gas transmission network.

2.24. After the proposed changes were submitted, the value of this compensation was increased to £60,[27] which NGGT has acknowledged within its public consultation on these changes. It notes plans to implement this in later revisions.

Ofgem's minded-to position

2.25. We view that the updates to the valuation of the loss of supply are appropriate. As highlighted by NGGT, the level of compensation has increased since it submitted the proposed changes. However, given that modifications to this value would result in a misalignment of risk valuations between RIIO-1 and RIIO-2, it would be more efficient to update this valuation are part of future revisions to the methodology.

Other modifications

Creation of additional supporting documentation

2.26. NGGT has included additional documentation within its suite of NARM Methodology documents. The Long-Term Risk and Network Risk Outputs Supporting Document has been created in order to describe how NGGT has used the asset-level Monetised Risk (MR) calculations to set its Baseline Network Risk Outputs (BNROs). As the NROs for NGGT have been set using the Long-Term Risk Benefit (LTRB) rather than the Single Year Risk (SYR) used during RIIO-1, a substantial proportion of this document aims to describe how LTRB is calculated.

2.27. NGGT proposes this change as the metrics used to evaluate its performance during RIIO-2 differ from those used during RIIO-1 and are not described in the existing methodology. Therefore, NGGT considers it necessary to update the suite of

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[27] Get compensation if you have a power cut - Citizens Advice

documents to describe how it calculates LTRB and how these are used in the setting of its NROs.

Ofgem's minded-to position

2.28. We view that the inclusion of the Long-Term Risk and Network Risk Outputs Supporting Document is appropriate. In order to provide sufficient clarity to both Ofgem and any other interested parties, it is necessary that NGGT provides a detailed overview of how it calculates LTRB and how this is applied in the calculation of its NROs.

2.29. In our view, by providing clarity on these elements, this modification better facilitates the achievement of SpC 9.2.5(h) which aims to 'enable the communication to the Authority and other interested parties of relevant information about the NTS in an accessible and transparent manner' and SpC 9.2.5(b) which aims to 'enable the Authority to establish the licensee's Baseline Network Risk Outputs and to undertake an objective assessment of the licensee's Baseline Network Risk Output delivery'.

Update to the Improvement Plan

2.30. NGGT includes an Improvement Plan within its Validation Report. This is a forward-looking plan which aims to address some of the input data uncertainties and limitations identified as part of NGGT's validation of its methodology.

2.31. Due to the validation which has been undertaken since the previous iteration of the methodology, NGGT has updated this plan to account for areas which it considers could be further improved.

Ofgem's minded-to position

2.32. We consider that the proposed changes to the Improvement Plan are appropriate. The changes included are reflective of the recommendations given by PIE following the expert review of NGGT's NARM Methodology, and as such represent a well-considered set of recommendations which would address some of the issues identified through validation.

2.33. The recommendations largely relate to input data uncertainties and limitations identified as part of the validation exercise. In our view, by dealing with these issues and reducing uncertainty within the risk modelling, the modification would better achieve SpC 9.2.5(c) which aims to 'enable the robust estimation of… Monetised Risk'.

Amendments to main methodology document following review

2.34. Following discussions both internally and with Ofgem, NGGT has made a number of minor editorial changes to the suite of documents that make up its NARM Methodology.

2.35. These changes do not materially affect the outputs of the methodology, but NGGT states that they have been undertaken to account for any errors (i.e. spelling and formatting errors) and to clarify any omissions.

Ofgem's minded-to views on NGGT's proposed modifications

2.36. Having considered the range of modifications proposed by NGGT, we are satisfied that the proposed modifications represent an improvement on the previous version of the NARM Methodology and enable NGGT to better facilitate the achievement of the NARM Objectives. We are therefore minded-to approve all proposed modifications.

3. Plans for further modifications

Section summary

This chapter sets out the current plans to develop the methodology for electricity transmission, gas transmission and gas distribution. Further details on the development plan for electricity distribution will be established in 2023 once RIIO-ED2 final determinations have been published.

3.1.   We are currently consulting on NGGT's proposed modifications to its NARM Methodology. However, in line with SpC 9.2.6, electricity transmission and gas distribution licensees must also at least once every year review their methodologies to identify scope for modifications that would better facilitate the achievement of the NARM Objectives set out in SpC 9.2.5.

3.2.   In order to identify areas of the existing methodologies which would benefit from further development, Ofgem and licensees have carried out a review of the NARM Methodologies for the gas transmission, gas distribution, and electricity transmission sectors. The review assessed how effectively the current methodologies are performing against 51 criteria, which were also developed jointly with the relevant licensees. The criteria have been included in 'Appendix 3 – NARM Methodology review criteria'.

3.3.   Following the methodology reviews and sector-specific meetings to discuss the outcome of the reviews, licensees were asked to submit a development plan which addressed the areas identified as requiring development. This plan divided development work into three categories:

o   Category 1 modifications: Work to be completed by the end of 2022.
o   Category 2 modifications: Work to be completed by the end of 2023.
o   Category 3 modifications: Work to be completed by the end of RIIO-2.

3.4.   Licensees within the electricity transmission sector have already submitted proposals for modifications to their NARM Methodologies. We intend to consult on these modifications alongside any category 1 modifications. Further development work

identified through the methodology review is ongoing. Some of the main areas being developed are:

- o   Inclusion of worked examples of MR calculations for each of the lead assets.
- o   Specific sections added, e.g. stakeholder engagement, future development.
- o   Document structure and content updates to improve transparency.

3.5.   Licensees within the gas distribution sector have not yet submitted proposals to modify their NARM Methodologies. Development work identified through the methodology review is ongoing. Some of the main areas being developed are:

- o   A suitable method for valuing Long Term Risk (LTR).
- o   Document structure and content updates to improve transparency.
- o   Review of engineering assessments.

3.6.   We are particularly focused on ensuring that a suitable approach to the valuation of LTR is developed as part of the GDNs' NARM Methodologies. As discussed during sector-specific meetings, our expectation is that a suitable approach is developed and sufficiently tested in time for use in the next price control.

NARM Methodology modification timeline

3.7.   While we seek to consult on any proposed modifications in line with the dates listed in paragraph 3.3, developments relating to winter preparedness mean there may be some additional resourcing constraint which could result in the timing of the NARM development publications being modified. The most likely alternative delivery scenario would be the grouping of proposed category 1 and 2 modifications into a single consultation which would take place in early 2024.

3.8.   The publication date of consultations seeking views on any proposed methodology modifications should not affect the underlying development work. We therefore expect licensees to continue that work in line with the previously submitted development plans.

4. Consultation proposal summary

4.1. We are minded to accept the proposed modifications to NGGT's NARM Methodology. We will make a final decision once we have had the opportunity to consider responses to this consultation. If, following consideration of responses, we decide to either approve the proposed modifications or approve the modification with amendments, we will do so by direction in line with SpC 9.2.9.

4.2. Going forward, we will continue to explore with all sectors, including gas transmission, ways in which the achievement of the NARM Objectives can better be facilitated.

4.3. As discussed above, work is currently underway for further modifications to the methodologies for gas transmission, electricity transmission, and gas distribution in 2023. Consultations will take place after licensees have complied with the requirements set out in SpC 9.2.8.

4.4. We intend to engage with the electricity distribution sector regarding the suitability of NARM Methodology modifications in 2023 once RIIO-ED2 final determinations have been published.

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Appendix 1 – NARM Objectives

The NARM Objectives can be found in SpC 9.2.5 of NGGT's Gas Transporter Licence.[28] They are as follows:

(a) to provide transparent, logical links between:
   i.   the Asset Data that the licensee collects through inspections, maintenance, and other asset management activities;
   ii. the data that the licensee inputs into its Asset Management Systems;
   iii. the licensee's asset management decisions; and
   iv. where relevant, the licensee's whole system investment decisions;

(b) to enable the Authority to establish the licensee's Baseline Network Risk Outputs and to undertake an objective assessment of the licensee's Baseline Network Risk Output delivery;

(c) to enable the robust estimation of Current Monetised Risk, Forecast Monetised Risk, Single-year Monetised Risk, and Long-term Monetised Risk of asset failure for:
   i.   each NARM Asset Category;
   ii. individual NARM Assets within each NARM Asset Category; and
   iii. the NTS;

(d) to enable the robust estimation of the Current Monetised Risk and Long-term Monetised Risk benefits delivered, or expected to be delivered, through interventions on specific assets or groups of assets;

(e) to provide inputs to help explain and justify, through Cost-Benefit Analysis:
   i.   the licensee's investment plans for managing and renewing its NARM Assets; and
   ii. the licensee's outturn delivery of investment options;

(f) to enable the identification and quantification of drivers leading to changes in Monetised Risk over time;

(g) to enable the comparative analysis of Monetised Risk between:
   i.   different NARM Asset Categories and between individual NARM Assets on the NTS;

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[28] Decision on the proposed modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions - 1 April 2022 | Ofgem: Licence Conditions 030222, National Grid Gas plc - NTS - Special Conditions_Clean_030222

ii. geographic areas of, and NARM Assets within, the NTS;

iii. the NTS and other networks within the same sector;

iv. the NTS and networks outside Great Britain with similar assets should similar approaches as set out in the NARM Methodology be applied to estimate Monetised Risk for those networks; and

v. the NTS and Distribution Networks within Great Britain; and

(h) to enable the communication to the Authority and other interested parties of relevant information about the NTS in an accessible and transparent manner

Appendix 2 – NARM Glossary

NARM-specific terminology associated with this consultation has been included below. A complete list can be found in the NARM Handbook.[29]

Please note that some of the terms defined in this Appendix may also be defined in the licence. In the event of any conflicting definitions, the relevant licence definition will take precedence.

Term	Definition
Baseline Allowed NARM Expenditure	The allowed expenditure associated with the Baseline Network Risk Outputs as set out in Appendix 1 to Special Condition 3.1 (Baseline Network Risk Outputs).
Electricity Transmission (ET)	Electricity Transmission Owners (ETOs); • National Grid Electricity Transmission Plc (NGET) • Scottish Hydro Electric Transmission Plc (SHET) • SP Transmission Ltd (SPT)
Electricity Distribution (ED)	Distribution Network Operators (DNOs); • Electricity North West Limited • Northern Powergrid: x2 DNOs • SP Energy Networks: x2 DNOs • SSE Power Distribution: x2 DNOs • UK Power Networks: x3 DNOs • Western Power Distribution: x4 DNOs
Gas Distribution (GD)	Gas Distribution Networks (GDNs); • Cadent Gas Ltd: x4 GDNs • Northern Gas Networks Ltd (NGN) • Scottish & Southern Gas Networks Plc (SGN): x2 GDNs • Wales and West Utilities Ltd (WWU)
Gas Transmission (GT)	Gas Transmission Owner; • National Grid Gas plc (NGGT)

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[29] Decision on the proposed modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions - 1 April 2022 | Ofgem: NARM Documents 030222, NARM_Handbook_v3.1.pdf, pg. 46

Term	Definition
Long-term Monetised Risk	The Monetised Risk measured over a defined period of time greater than one year from a given start date and equal to the cumulative Single-Year Monetised Risk values over the defined period.
Monetised Risk (MR)	An estimation of asset risk as derived in accordance with the NARM Methodology as well as the similarly derived estimated risks associated with aggregated asset groupings, and disaggregated sub-components, as relevant.
Monetised Risk Benefit	The risk benefit delivered or expected to be delivered by an asset intervention, which: a) is the difference between without intervention and with intervention Monetised Risk; b) can be measured over one year or over a longer period of time; and c) includes both direct (i.e. on the asset itself) and indirect (i.e. on adjacent assets or on the wider system) risk benefit.
NARM Asset	An asset specified within the NARM Methodology and where its associated Monetised Risk can be estimated by applying the NARM Methodology.
NARM Asset Category	A group of assets with similar function and design as specified in the NARM Methodology.
NARM Methodology/ NARM Methodologies	The methodology established in accordance with Special Condition 9.2 (Network Asset Risk Metric methodology). The NOMs Methodology in effect on 31 March 2021 is deemed to be the NARM Methodology in effect from 1 April 2021 until superseded.
NARM Objectives	The objectives set out in Part B of Special Condition 9.2 (Network Asset Risk Metric methodology).
Network Asset Risk Metric (NARM)	The Monetised Risk associated with a NARM Asset or the Monetised Risk Benefit associated with a NARM Asset intervention.
Network Output Measures (NOMs)	RIIO-1 equivalent of Network Asset Risk Metric (NARM).
Network Risk Output	The risk benefit delivered or expected to be delivered by an Asset Intervention and is calculated as the difference between Monetised Risk values associated with the "without intervention scenario" and the "with intervention scenario". This is measured over a period equal to the assumed intervention lifetime from the end of the Price Control Period,

Term	Definition
	which can vary for asset category or specific assets and intervention types for Electricity Transmission and Gas Transmission. For Gas Distribution only the first year of risk benefit is measured following the intervention.
NOMs Methodology	For ET, the methodology approved under Special Condition 2L (Methodology for Network Output Measures) of the ETOs' Electricity Transmission licences as in force on 31 March 2021. For GT, the methodology approved under Special Condition 7D (Methodology for Network Output Measures) of NGGT's licence as in force on 31 March 2021. For GD, the methodology approved under Special Condition 4G (Methodology for Network Output Measures) of the GDNs' Gas Transporter licences as in force on 31 March 2021.
Rebasing	The process of modifying the Baseline Network Risk Output as set out in Part C of Special Condition 3.1 (Baseline Network Risk Outputs).
Risk Pound (R£)	The unit used to denote Monetised Risk values. R£ is used to differentiate from financial monetary values.
Single-Year Monetised Risk	The Monetised Risk measured over a given one-year time period.
Unit Cost of Risk Benefit (UCR)	The average cost of delivering a single unit (one Risk Pound, R£1) of Monetised Risk Benefit for a given intervention in an asset or group of assets.

Appendix 3 – NARM Methodology review criteria

Criteria_ID	Audit_Area	Criteria
01	TECHNICAL CONSIDERATIONS (Engineering Assessments)	Are the engineering assessments used to implement the methodology comprehensive, accurate, appropriate, and clearly explained?
02	TECHNICAL CONSIDERATIONS (Engineering Assessments)	Are the engineering parameters within the methodology aligned with, or suitably proxies for, the assessments that the network company should conduct and consider in making its investment decisions? Where parameter scoring requires engineering judgement are the scoring rules unambiguous and robust?
03	TECHNICAL CONSIDERATIONS (Supporting Documentation)	Are the engineering assessments supported by relevant technical documentation?
04	TECHNICAL CONSIDERATIONS (Asset Specific Details)	Are the current groupings/sub-groups/cohorts of assets still appropriate?
05	TECHNICAL CONSIDERATIONS (Scope and Definition)	Does scope of assets within the methodology reflect the full range which could reasonably be included and are the reasons for keeping the asset categories currently out of scope non-NARM assets still valid?
06	TECHNICAL CONSIDERATIONS (Scope and Definition)	Are there any metrics or measures which require adjustment e.g. is Average Circuit Unreliability required within the metrics for ET?
07	TECHNICAL CONSIDERATIONS (Complexity)	Are the levels of complexity within the methodology appropriate? Can any elements be simplified without materially compromising the robustness of the results? Are any areas too simplified to satisfactorily reflect real world complexity?
08	TECHNICAL CONSIDERATIONS (Interventions)	Are the types of intervention on any given asset or groups of assets as outlined in the methodology justified from a technical perspective? Are the intervention type options within the methodology suitably comprehensive?
09	TECHNICAL CONSIDERATIONS (PoF Derivation)	Are the Probability of Failure calculations supported by robust and accurate technical justifications reflecting different sub-components, failure modes, conditional probabilities and different types of failure?
10	TECHNICAL CONSIDERATIONS (PoF Derivation)	Is the modelling of End of Life Modifiers/failure rates supported by sufficient empirical evidence? Is there any scope for improving the modelling by utilising additional available information/data sources?
11	TECHNICAL CONSIDERATIONS (PoF Derivation)	Are all asset event trees used in the methodology still suitable or do they need to be updated or further developed?
12	TECHNICAL CONSIDERATIONS (CoF Derivation)	Are the probability of consequences still accurate?
13	TECHNICAL CONSIDERATIONS (CoF Derivation)	Are consequence of failure reference values up to date and referenced from the most appropriate sources?

Criteria_ID	Audit_Area	Criteria
14	TECHNICAL CONSIDERATIONS (CoF Derivation)	Does the methodology fully capture reflect and appropriately value all relevant safety, environmental, system, and financial consequences?
15	TECHNICAL CONSIDERATIONS (CoF Derivation)	Are the Consequence of Failure calculations supported by robust and accurate technical logic reflecting different sub-components, failure modes, conditional probabilities and different types of failure?
16	TECHNICAL CONSIDERATIONS (Asset Deterioration)	Does the methodology fully explain how deterioration (and forecast risk values) are derived. Is the approach to modelling deterioration supported by evidence and appropriate from a technical perspective?
17	TECHNICAL CONSIDERATIONS (Long Term Risk)	Has the methodology clearly set out the steps for estimating long-term risk?
18	TECHNICAL CONSIDERATIONS (Uncertainty)	Is the approach to uncertainty appropriate and well evidenced?
19	TECHNICAL CONSIDERATIONS (Interdependencies)	Have relevant interdependences been taken into account in the methodology for the PoF and CoF and are these interdependences well evidenced e.g. has the relationship between Mains and Services been explored for GD?
20	CONTINUOUS IMPROVEMENT (Using the most up to date information)	Has the methodology taken into account any new and relevant information which has become available?
21	CONTINUOUS IMPROVEMENT (Using the most up to date information)	Has action been taken in areas where the licensee previously signaled they did not have enough information?
22	CONTINUOUS IMPROVEMENT (Addressing areas of weakness)	Has the licensee sought to address previously recognised limitations?
23	CONTINUOUS IMPROVEMENT (Addressing areas of weakness)	Has the licensee provided updates to account for any outstanding issues?
24	CONTINUOUS IMPROVEMENT (Addressing lessons learned)	Does the approach to data assurance remain appropriate i.e. how does the company ensure the source data used is accurate, reliable and complete?
25	CONTINUOUS IMPROVEMENT (Addressing lessons learned)	Is learning from data collection associated with annual reporting being fed into the future development of NARM?
26	FULLY TESTED (Using the most up to date information)	Has a plan been outlined for carrying out recalibration and revalidation of NARM?
27	FULLY TESTED (General observations)	Has the licensee demonstrated completion of CTV testing and identified results?

Criteria_ID	Audit_Area	Criteria
28	FACILITATING TRANSPARENCY (Publication of correct and sufficient information)	With the exception of any elements adhering to the criteria set out in Annex 1, are all parts of the methodology publicly available? (ANNEX 1 TO BE AGREED)
29	FACILITATING TRANSPARENCY (Covering technical aspects)	Is all relevant technical detail provided to enable an understanding of the licensee's approach and its performance?
30	FACILITATING TRANSPARENCY (Covering technical aspects)	Is the methodology structured and drafted so as to maximize understanding for readers?
31	FACILITATING TRANSPARENCY (Presenting parameters and formulae)	Have all relevant parameters and formulae been presented and fully explained?
32	FACILITATING TRANSPARENCY (Accessibility)	Do the documents follow 'best practice' in ensuring they are as accessible as possible e.g. for readers with visual impairment?
33	LONG-TERM FOCUS (Reflecting the energy transition)	Does the methodology effectively facilitate compliance with regulatory reporting requirements?
34	LONG-TERM FOCUS (Reflecting the energy transition)	Has the licensee accounted for new data streams resulting from digitalisation?
35	LONG-TERM FOCUS (Reflecting the energy transition)	Has the licensee accounted for future changes in the generation and demand mix and different potential scenarios resulting from future levels of electrification?
36	LONG-TERM FOCUS (Reflecting the energy transition)	Is there a forward-looking section present within the methodology which identifies areas for future development and outlines the actions being taken to support these?
37	ALIGNMENT (General observations)	Are there areas where greater alignment with other sector or company NARM methodologies can be achieved?
38	ALIGNMENT (General observations)	Have any outstanding barriers to alignment within and across sectors been identified and are steps being taken to address these?
39	REFLECTING INNOVATION (General observations)	Has the methodology modelled the additional risk benefits arising from innovation-driven changes?
40	REFLECTING STAKEHOLDER VIEWS (General observations)	Has consideration been given to the tracking and meeting of stakeholder requirements?
41	REFLECTING STAKEHOLDER VIEWS (General observations)	Have properly informed and independent stakeholder views been gathered, considered, and appropriately reflected in the methodology?

Criteria_ID	Audit_Area	Criteria
42	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology appropriately address all relevant drivers of change in Monetised Risk? Does the methodology enable suitably robust estimation of the monetised risk impact of each driver?
43	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Are outputs from the methodology comparable with those from other sectors and other network companies?
44	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology allow Ofgem and other stakeholders to understand the links between the data that a network company collects and utilises and the asset management and investment decisions it makes?
45	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology enable Ofgem to set outputs for the network company to deliver over a price control period and to ensure that what the network company actually delivers can be compared to the targets on a like-for-like basis?
46	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology enable the network company to estimate the Monetised Risk of its network assets both now and in the future?
47	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology enable the network company (both single-year snapshot risk benefit and long-term risk benefit) to estimate the Monetised Risk Benefit that would be delivered by different types of interventions on any given asset or group of assets?
48	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Are Monetised Risk Benefits realistic with robust probability estimates and correctly valued consequences and therefore suitable for use as inputs in Cost Benefit Analyses?
49	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology enable the identification and quantification of drivers of changes in Monetised Risk over time?
50	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology allow Monetised Risk comparisons to be made between different assets and different networks? In order for this objective to be achieved, the methodologies used for estimating Monetised Risk should be based as little as possible on subjectivity.
51	MEETING THE NARM OBJECTIVES (The extent to which current objectives are met)	Does the methodology enable the network company to report to Ofgem and other stakeholders in a way that can be easily understood and unambiguously interpreted?

Appendix 4 – Privacy notice on consultations

Personal data

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

1. The identity of the controller and contact details of our Data Protection Officer

The Gas and Electricity Markets Authority is the controller, (for ease of reference, "Ofgem"). The Data Protection Officer can be contacted at dpo@ofgem.gov.uk

2. Why we are collecting your personal data

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

3. Our legal basis for processing your personal data

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest. i.e. a consultation.

3. With whom we will be sharing your personal data

We will not be sharing your personal data with organisations outside of Ofgem.

4. For how long we will keep your personal data, or criteria used to determine the retention period.

Your personal data will be held for six months following the conclusion of the consultation.

5. Your rights

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete

- ask us to delete personal data when we no longer need it
- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data
- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3rd parties
- tell us your preferred frequency, content and format of our communications with you
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at https://ico.org.uk/, or telephone 0303 123 1113.

6. Your personal data will not be sent overseas

7. Your personal data will not be used for any automated decision making.

8. Your personal data will be stored in a secure government IT system.

9. More information For more information on how Ofgem processes your data, click on the link to our "Ofgem privacy promise".