# Response to Public Consultation

## Network Output Measures (NOMs) Incentive Methodology

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## Document Control Sheet

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# Introduction

The Network Output Measures (NOMs) is one of the most important deliverables in Ofgem's RIIO (Revenue = Incentives + Innovation + Output) regulatory framework[1]. It is directly associated with the Capital Expenditures (Capex) for the (lead assets) refurbishment and replacement on the gas and electricity transmission and distribution networks, the total cost of which comprise a considerable proportion of the UK consumers energy bill. More specifically, the NOMs aim to measure asset risk using a data-driven modelling approach. The risk naturally increases with time, mainly due to ageing of the network. Capex is required to mitigate the risks using various types of interventions.

Despite the apparent complications and variabilities of the (engineering) assets in the infrastructure networks, the key principle applies that the risks associated with the asset failure can be measured in a monetised fashion using a combination of the probability of causing disruptions and its (socio-economic) impact when the disruption happens. This is a typical econometric approach used widely across all types of the infrastructure networks, for example the socio-economic impact of renewing railway infrastructure is calculated through railway congestion and disruption using a standard framework developed by Network Rail[2]. Ofgem's vision is to have a common "currency" measuring different asset types in different networks. The risk reduction as a result of different types of intervention (also termed as asset management activities in this context)[3] can be measured using this "currency" to drive asset management decisions and/or to determine the appropriate funding levels. The ability of valuing assets using monetised risks further opens the gateway to fairly assess/incentivise the performance and lead to a healthy "competition" between network companies, driving better asset management practices through the regulatory framework[4].

There are two aspects of the NOMs framework:

1) a data-driven (monetised) risk measure for the network assets, underpinning;

2) a regulatory framework regarding performance assessments and incentives.

For 1) the (asset) risk is driven by the condition of the assets, together with the criticality which is the consequence if the specific risk materialises. An accurate risk measure requires considerable effort regarding modelling and data collection for network companies. Particularly, the electricity distribution network companies agreed Common Network Asset Index Methodology (CNAIM) in May 2017[5] with the data collection plan agreed in December 2016[6]. The gas distribution network companies, as well as the gas and electricity Transmission network companies are still developing the monetised risk measures[7, 8, 9, 10], which poses further uncertainties around the applicability of the incentive mechanism and the material impacts. This is in line with the statement in section 1.5.1 (of the document under consultation) that "given that … three of the four sectors do not yet have monetised risk targets agreed with Ofgem, there is uncertainty about the practical application of the methodology ... Ofgem will undertake a review of the applicability of this methodology … once their monetised risk targets are finalised …"

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[1] https://www.ofgem.gov.uk/sites/default/files/docs/2013/03/price_control_explained_march13_web.pdf

[2] An example of application can be found in the Schedule 8 payment arrangement using a pure data-driven approach (translating the minutes of train lateness to monetary values. More details can be found in http://orr.gov.uk/__data/assets/pdf_file/0010/6004/halcrow-sch8-recalibration-2013-12-16.pdf

[3] Strictly speaking, NOMs mainly consider Capex related interventions that are focused to mitigate risks related to asset condition deterioration. Opex relation interventions, despite its risks reduction effect, are not the focus of NOMs.

[4] It's not the traditional "competition" that driving by markets (e.g. arbitrage) but through a consistent regulatory framework of measuring performances – similar example is the service incentive (SIM) competition initiated by Ofwat  https://www.ofwat.gov.uk/wp-content/uploads/2015/10/rpt_com201503sim.pdf

[5] https://www.ofgem.gov.uk/publications-and-updates/decision-dno-common-network-asset-indices-methodology

[6] https://www.ofgem.gov.uk/system/files/docs/2016/12/dnos_information_gathering_plan_-_decision.pdf

[7] https://www.ofgem.gov.uk/publications-and-updates/notice-intention-not-reject-modified-gas-distribution-network-output-measures-noms-methodology

[8] https://www.ofgem.gov.uk/system/files/docs/2017/12/riio_gas_transmission_annual_report_2016-17_0.pdf

[9] https://www.ofgem.gov.uk/publications-and-updates/notice-intention-not-reject-modified-electricity-transmission-network-output-measures-noms-methodology

[10] This may be due to difficulties to overcome small sample size of data and/or different modelling approaches used in the transmission network companies. However there are techniques suit better for small sample size and differences in modelling approaches should be leading to consistent and comparable risk measurements.

For 2) Ofgem has developed a detailed methodology (the document under consultation) regarding performance assessments and incentives. This methodology assumes 1) was fully developed ahead of the review period of current price control (RIIO-1), with the existing target translated/rebased as a single (monetised) risk target for each network company[11]. A follow-up assessment methodology is detailed to evaluate the network companies' performance against this target. The document includes a flow-chart with narratives, approaches to be used/considered to assess the performance and provide justifications, proposed regulatory review timelines, and worked examples showing the incentive mechanism, together "with issues to be resolved later" on the "materiality threshold" arrangement. A number of questions are asked by Ofgem to obtain more specific answers to the public consultation and we provide our understandings and response as below.

## Question 1

**Does the process as described in the draft methodology flow-chart represent a suitable means of implementing the data gathering and assessment phases of the incentive mechanism? Are there any improvements that you could suggest? Please state your rationale alongside any answers provided.**

We believe combining the narratives with the flow-chart covers most of the scenarios at the end of the price control. It clearly demonstrates Ofgem's commitment to make sure the delivery of the target is in the interest of consumers. From this perspective, we believe that not only the final NOMs position needs to be evaluated, the journey reaching the final NOMs position also needs to be assessed to understand where the under/over-delivery originates from. It is unlikely the assessment for only the differences between the final NOMs position and the target (possibly with the threshold) will provide a satisfactory answer.

This journey needs to be understood even for the "on-target delivery", to give better protection to the consumers - we suggest in Stage 4 "Ofgem assess delivery against monetised risk target" the journey to the final NOMs position is assessed together with the final position against the target.

## Question 2

**Do you agree with the use of a materiality threshold around the NOMs network monetised risk target to assess compliance? Do you consider that the range proposed for the Distribution sectors is appropriate? Please state your rationale alongside any answers provided.**

The methodology is relatively light regarding where the "materiality threshold" originates from, using the simple justification that "the financial adjustments being made". It is unclear why those "adjustments" can't be directly reflected in the target and/or the justifications, we do not tend to support this (threshold) arrangement if further justifications can't be provided.

In terms of the size of the threshold, to our understanding the threshold (deadband) can be a representation of uncertainties (we believe that all the "adjustments" that are certain at the end of price control should be reflected as justification of under/over-delivery instead of using a deadband). Uncertainties may include those when target was set using the forecast at the start of the price control, and/or some uncontrollable factors that prevent the delivery of the (monetised risk) target being hit. In those cases, it might be reasonable to setup a deadband. However, it is essential that consumers and network companies are exposed to/protected against similar level of uncertainties from which the correct size of the range can be determined, especially as 1% (currently proposed for distribution network) of revenue is not a small figure.

If a deadband is used, following our response to question 1, the network company's journey to hit the deadband should be also evaluated. We believe that Ofgem will act in the consumer's interest so that the deadband should not provide opportunities to network companies to "exploit", for example, putting as much as "difficult to justify" work within the deadband or deliberately putting the right amount in the deadband to maximise the (non-justified) profit.

## Question 3

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[11] Although distribution NOMs and transmission NOMs have different ways of setting the target, it seems that the methodology has sufficiently considered such variability.

**Do you agree that the exposure to the NOMs incentive should be measured from the upper/lower materiality thresholds? Please state your rationale alongside any answers provided.**

It would be reasonable if similar level of "threshold" are protected against for both network companies and consumers – see our response to question 2.

## Question 4

**Do you agree with our proposal for how the associated costs of over/under-delivery are derived? Please state your rationale alongside any answers provided.**

We agree with the principle of the incentive methodology and we agree the associated cost of over/under-delivery against the risk target should be identified (see our response to question 5 for more details). The 2.5% reward/penalty seems reasonable as long as this applies fairly for all network companies (also in line with the license conditions).

## Question 5

**Do you agree with the use of the actual spend profile for allocating the associated costs of a justified over-delivery or unjustified under-delivery? Are there other options that you consider would be more appropriate? Please state your rationale alongside any answers provided.**

Our understanding is that the exact spending/timing of the intervention can be difficult to identify and associated with risk reductions if one project/scheme is dealing with multiple assets delivering grouped risk reduction benefit over a lengthy period of time. For this situation using the spending profile of the project/scheme would be reasonable while we suggested a detailed rule set/calculation to be finalised before the review of the price control.

On the other hand, it is important to collect project data (time, cost, risks) more rigorously. Using the spend profile when it is possible to use actual data should not provide better financial benefit than using the actual data – to encourage/reward those network companies who have better data collection practices.

## Question 6

**Do you consider that the timeline proposed is achievable and realistic? Are there improvements that you can recommend? Please state your rationale alongside any answers provided.**

Although we don't have visibility of the resource level/expertise level of the assessors in Ofgem, we believe it is a very ambitious timeline, especially under the amount of uncertainties of fully developing NOMs methodology.

A practical solution will be before the assessment, to configure a structured data pipeline and analytics pipeline to maximise the level of automation and/or to have a mock assessment a year before.

## Question 7

**Do you consider that the implementation of a common NOMs incentive methodology should require an impact assessment? Please state your rationale alongside any answers provided.**

We appreciate that the impact assessment would be useful in terms of a comprehensive incentive methodology, however considering the uncertainties and variabilities around the current NOMs methodology (monetised risk methodology) from different network companies (as detailed in the introduction), at the same time the constraints of the time scale, there would be unlikely an efficient/practical way to conduct a meaningful impact assessment at this stage.